Wetland Ecosystem Series, 12

FAUNAL DIVERSITY OF PONG DAM AND ITS CATCHMENT AREA

(District Kangra, Himachal Pradesh)

OOLOGICAL SURVEY OF INDIA

Wetland Ecosystem Series, 12

Faunal Diversity of Pong Dam and its Catchment Area

(District Kangra, Himachal Pradesh)

Edited by the Director, Zoological Survey of India, Kolkata

सत्यमेव जयते

Zoological Survey of India
Kolkata

CITATION

Editor–Director, 2009. *Faunal Diversity of Pong Dam and its Catchment Area, Wetland Ecosystem Series*, **12** : 1-138 + 8 plates (Published by the Director, *Zool. Surv. India*, Kolkata)

Published : October, 2009

ISBN 978-81-8171-236-3

© *Govt. of India*, 2009

ALL RIGHTS RESERVED

- No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the publisher.
- This book is sold subject to the condition that it shall not, by way of trade, be lent, re-sold, hired out or otherwise disposed of without the publisher's consent, in any form of binding or cover other than that in which it is published.
- The correct price of this publication is the price printed on this page. Any revised price indicated by a rubber stamp or by a sticker or by any other means is incorrect and should be unacceptable.

PRICE
India : Rs. 200.00
Foreign : $ 15; £ 10

Published at the Publication Division by the Director, Zoological Survey of India, 234/4, A.J.C. Bose Road, 2nd MSO Building, Kolkata–700 020 and printed at Calcutta Repro Graphics, Kolkata–700 006.

WETLAND ECOSYSTEM SERIES

FAUNAL DIVERSITY OF PONG DAM AND ITS CATCHMENT AREA

No. 12 **2009** **1-138**

CONTENTS

1. Overview 1-6
2. Earthworm : Oligochaeta 7-12
3. Insecta : Odonata 13-19
4. Rhopalocera : Lepidoptera (Insecta) 21-41
5. Orthoptera (Insecta) 43-63
6. Pisces 65-92
7. Amphibia 93-97
8. Reptilia 99-108
9. Aves 109-138

ACKNOWLEDGEMENTS

The coordinators are grateful to the Director Zoological Survey of India Kolkata for providing this opportunity to bring out the document on the "Faunal Diversity of Pong Dam Wetland Himachal Pradesh. The authors are thankful to Dr. N. C. Nandi, Additional Director, Zoological Survey of India, Kolkata for critically going through the manuscript and suggesting important improvements.

The coordinators are thankful to the Department of Forests Himachal Pradesh for providing necessary facilities. Our thanks are to the field staff of High Altitude Zoology Field Station, Zoological Survey of India, Solan for their hole heartedly devotion for surveying and collection of scientific materials It is our pleasant duty to thank the Publication and Production Officer, Zoological Survey of India Kolkata for taking efforts for the publication of the document in time.

Dr. H.S. Mehta
Dr. Kamal Saini
Dr. Indu Sharma

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, 12 : 1-6, 2009

AN OVERVIEW

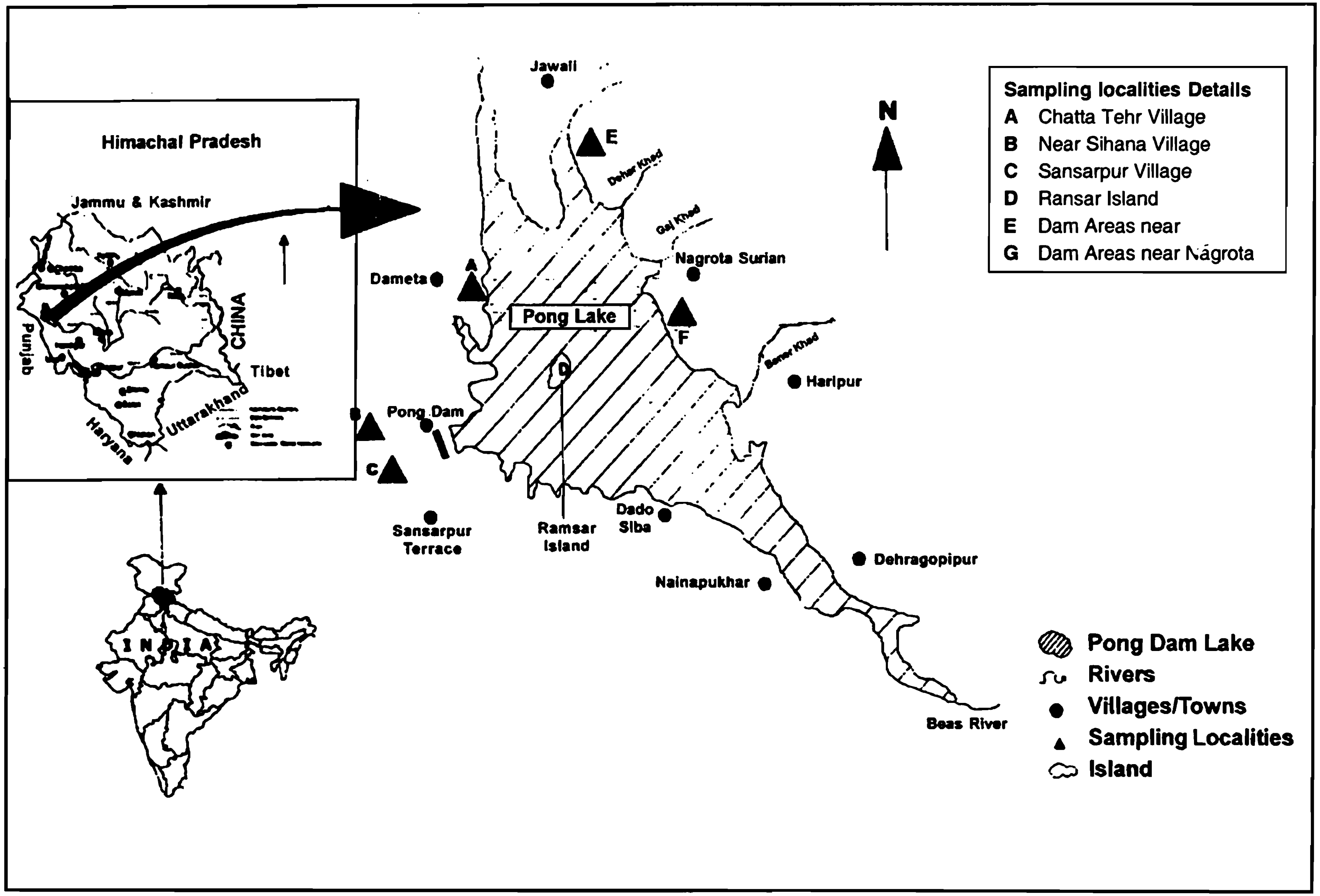
H.S. MEHTA, KAMAL SAINI and INDU SHARMA
Zoological Survey of India, High Altitude Zoology Field Station, Solan–173 212

INTRODUCTION

The wetlands are transitional zones between aquatic and terrestrial ecosystems. They possess characteristics of both terrestrial and aquatic ecosystems along with their own distinctiveness. These distinct ecosystems are generally identified by having one or more properties *i.e.*, area is permanently or periodically inundated, supporting growth of hydrophytes, and has hydric soils. Marshes, swamps, floodplains, bogs, peat lands, shallow ponds, littoral zones of larger water bodies, tidal marshes, etc. are included in the wetlands. Wetlands cover approximately 6% of the earth's surface. These habitats in India display significant ecological diversity because of diverse climatic conditions and changing topography. It is estimated that wetlands in India occupy 58.2 million hectare area excluding rivers, canals and channels (IUCN, 1989). Of this, 3 million hectare comes under impoundments in the form of large reservoirs, pools and ponds. According to the estimates of the Ministry of Environment and Forests, Government of India (1990), India possesses about 4.1 million ha of wetlands (excluding paddy fields and mangroves), of which 1.5 million ha are natural and 2.6 million ha man-made. Man-made wetlands have been built primarily for meeting the needs of irrigation, water supply, electricity, fisheries, and flood control, etc. Unabated deterioration and loss of natural wetlands due to various anthropogenic pressures, in the past, has essentially augmented the importance of man-made wetland (barrages, reservoirs, tanks, etc.).

Man-made wetlands also function as natural aquatic ecosystems without any external inputs to life form diversity and serve as alternative habitats for supporting considerable biodiversity. A slight alteration in hydrology of a wetland may bring massive changes in species composition, richness and productivity of its biota (Prasad *et al.*, 2002).

It is estimated that freshwater wetlands alone support 20% of the known range of biodiversity in India (Prasad *et al.*, 2002). Species diversity in Indian wetlands includes 17,853 animal species belonging to 34 groups (Alfred and Nandi, 2000), and more than 1,200 species of aquatic plants (Gopal, 1995). Birds are an essential faunal component of wetland



Map of Pong Dam wetland showing sampling localities

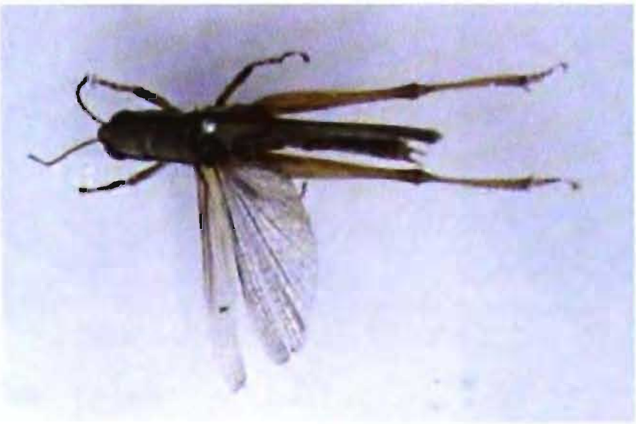
PLATE – I

A close view of Pong Dam wetland in dry season in western side

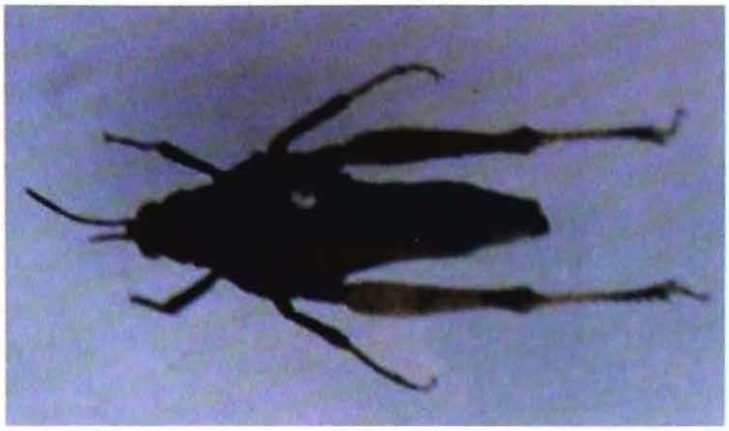
A view of Pong Dam wetland with migratory birds in winter

Butterflies mudpudling

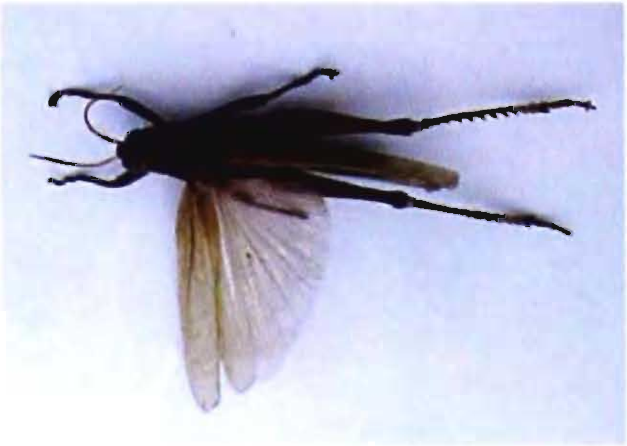
PLATE – II



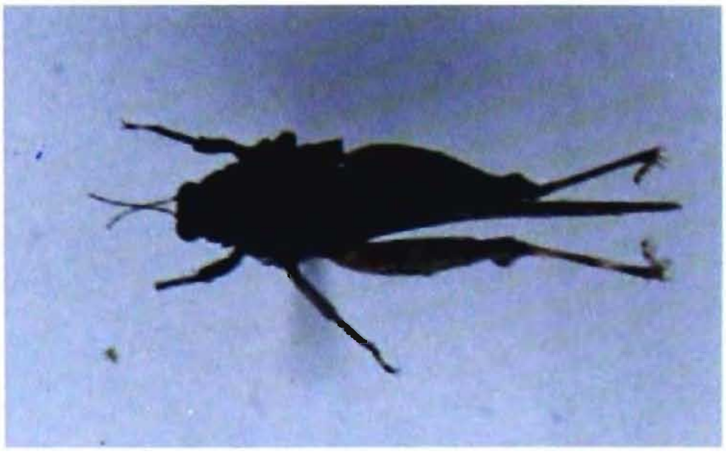
Oxya h. hyla



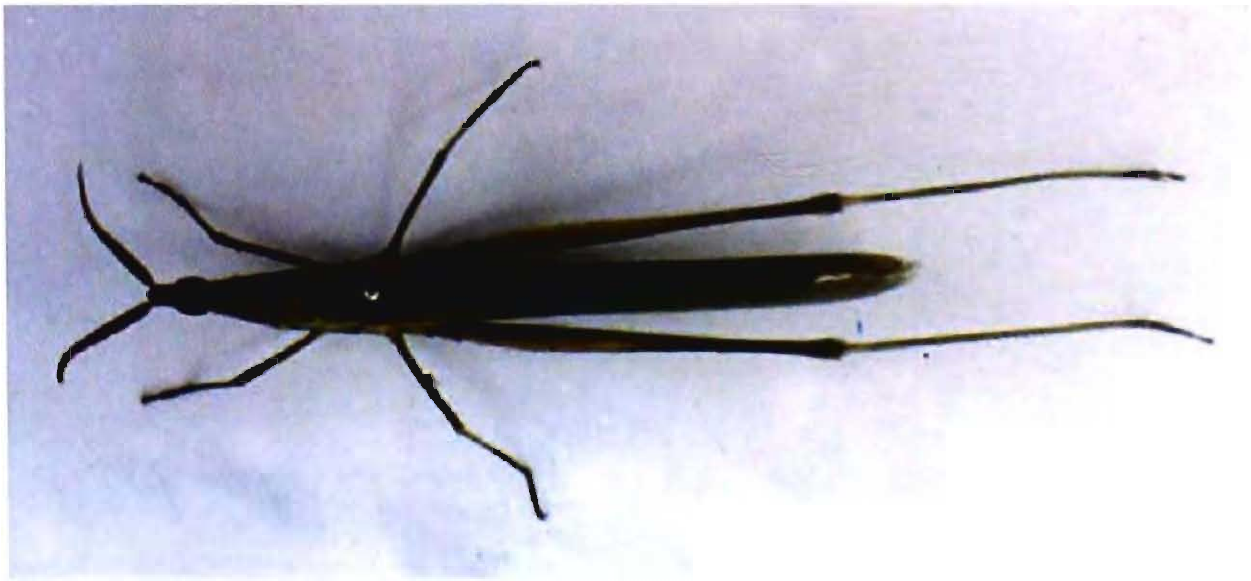
Chrotogonous t. trachypterus



Pachyacris vinosa

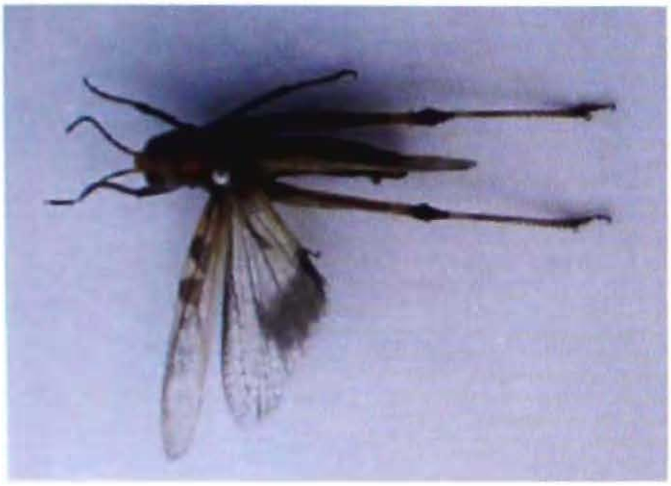


Chrotogonus sp.

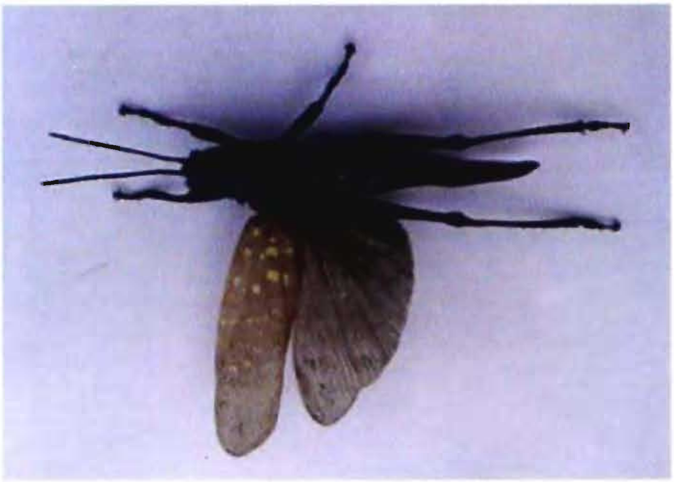


Acrida exaltata

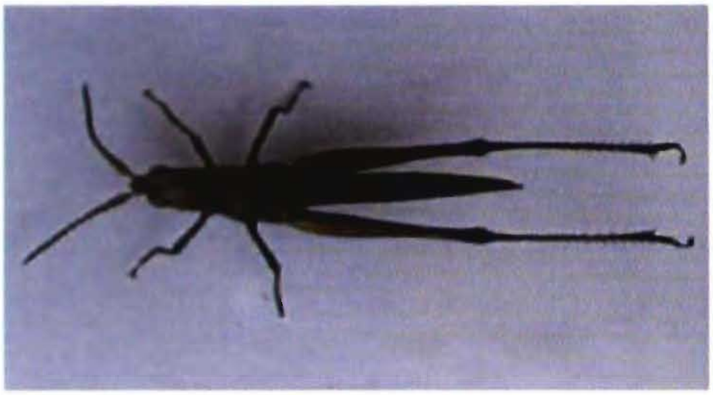
PLATE – III



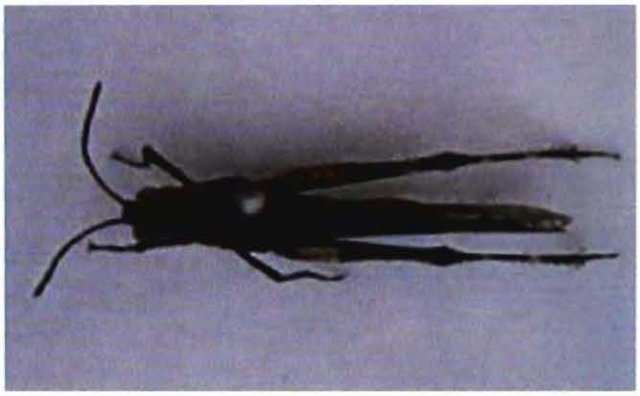
Oedaleus abruptus



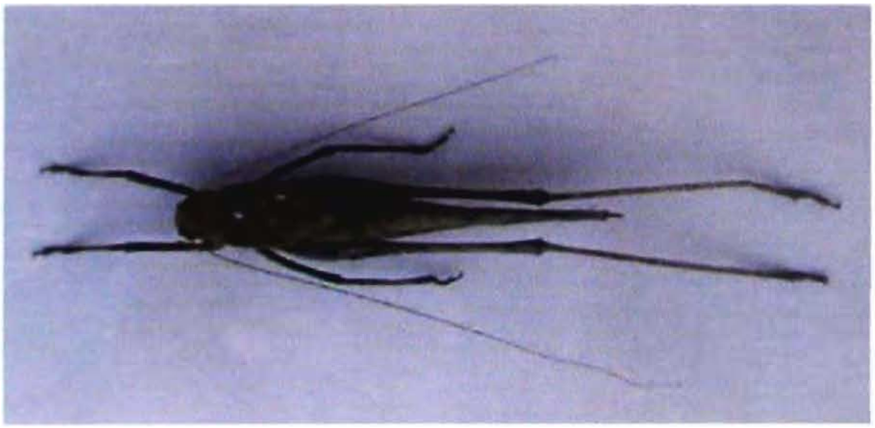
Aularches miliaris



Phalaeoba infumata

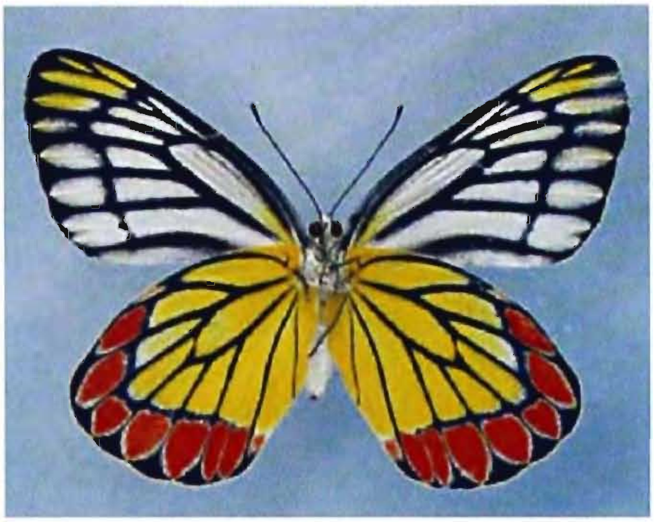


Trilophida annulata

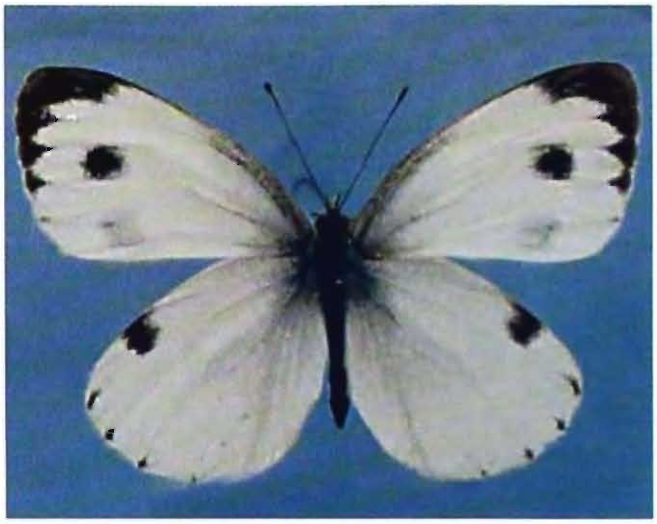


Mcopoda elongata

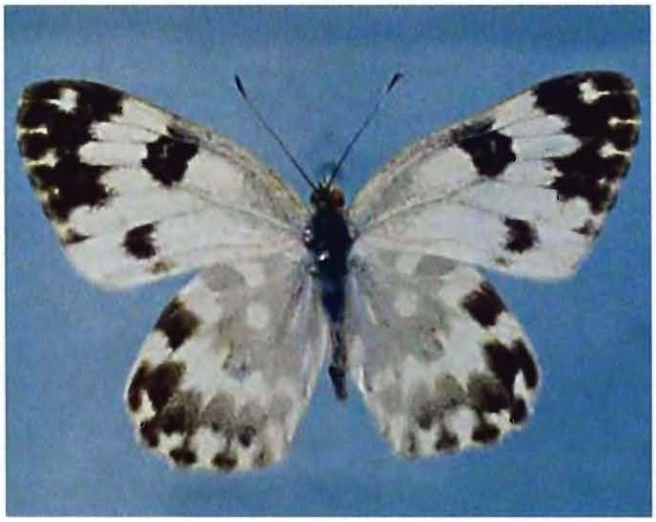
PLATE – IV



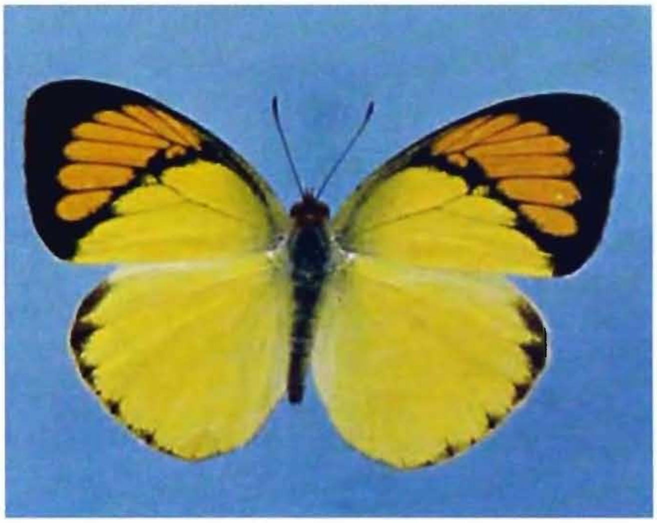
Delias eucharis



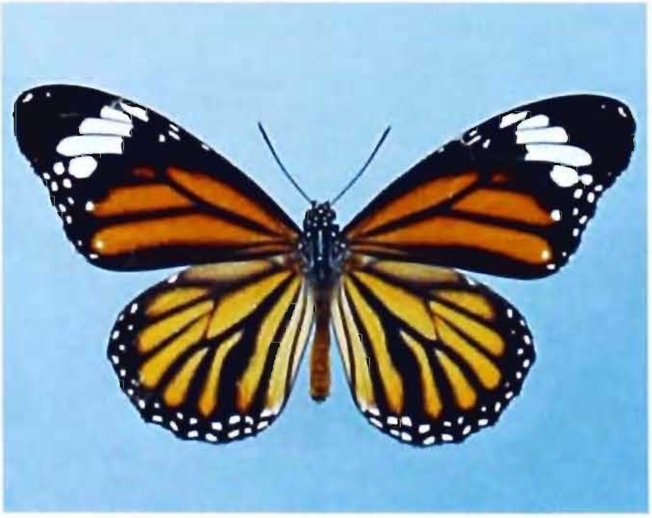
Pieris canidia indica



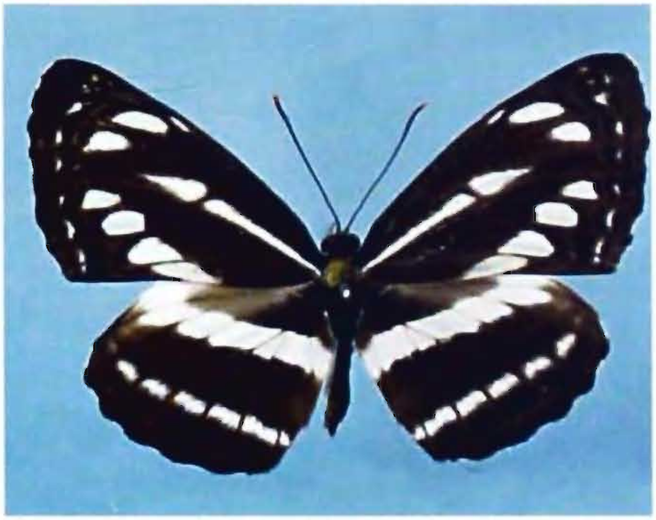
Pontia daplidice moorei



Ixias pyrene

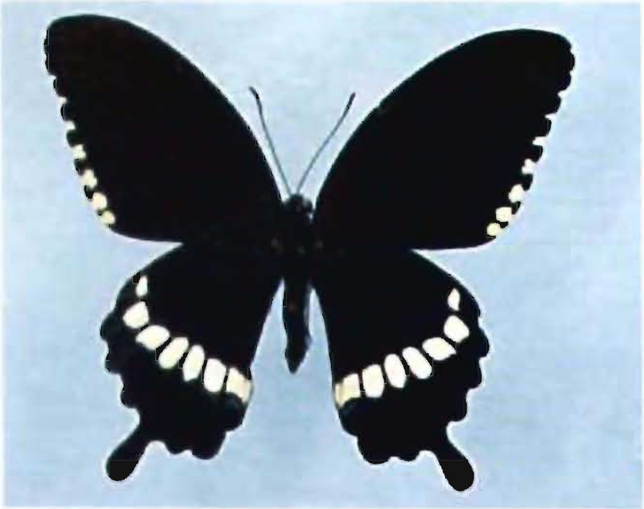


Danaus genutia

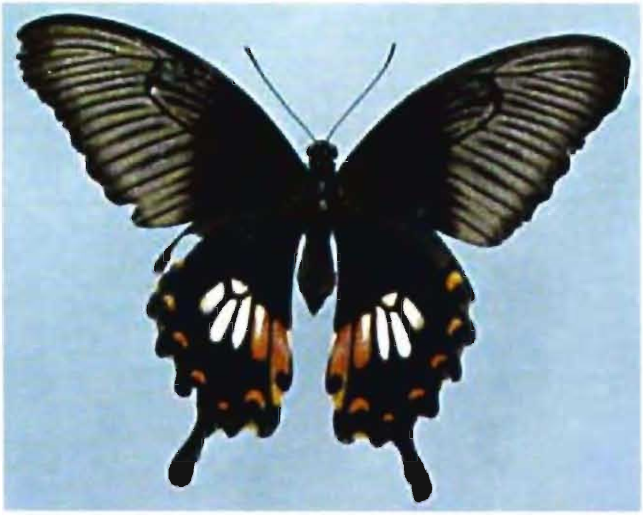


Neptis hylas astola

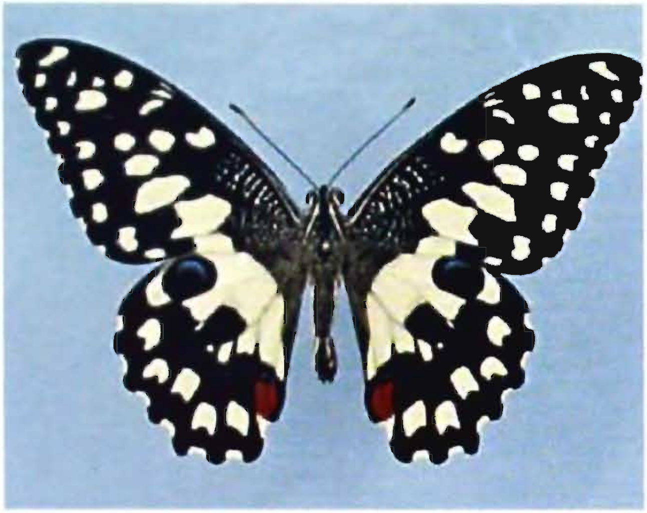
PLATE - V



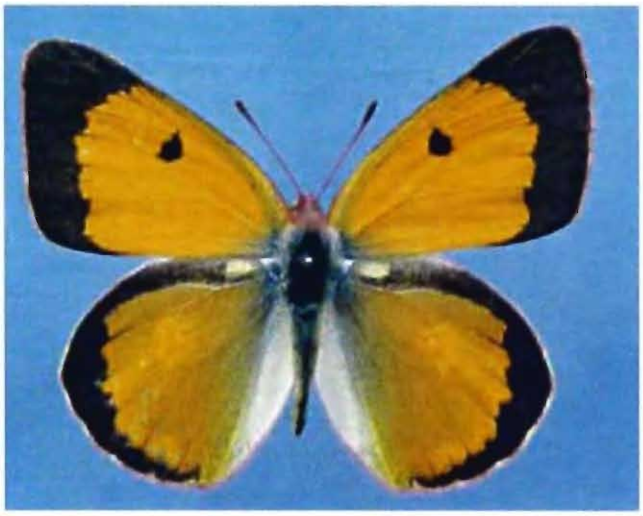
Papilio poltus romulus (male)



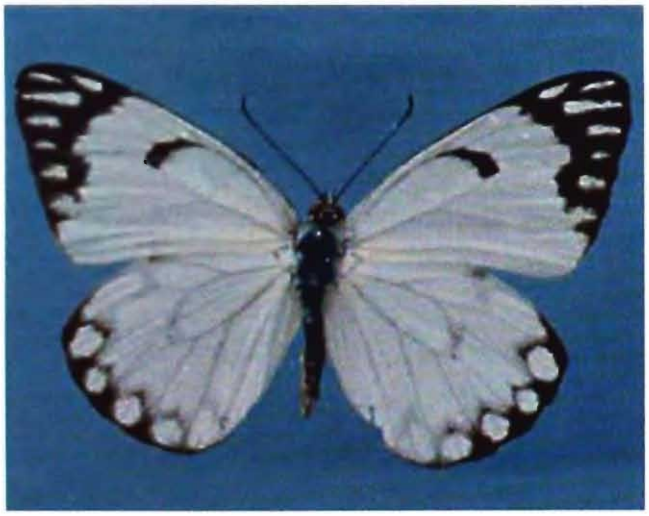
P. poytus romulus (female)



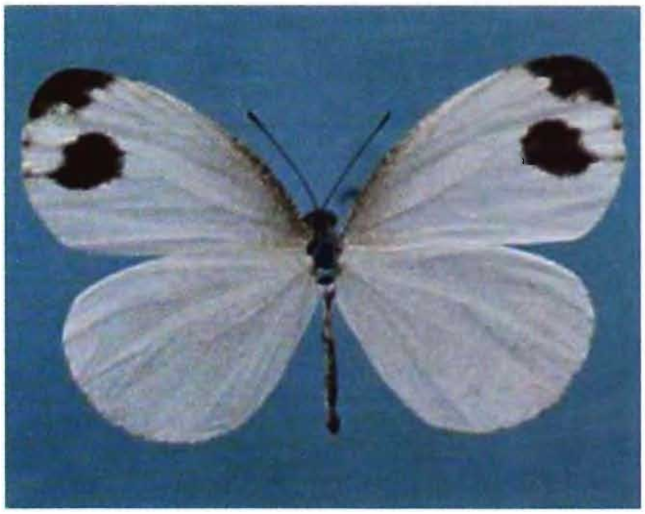
P. demoleus demoleus



Colias electo fieldi



Anaphaeis aurota aurota



Lptosia nina nina

PLATE - VI

Black ibis at Guglara

Black ibis

Pied Kingfisher, a wetland dependant bird

Brown headed Kingfisher

Waterhen

Moorehen

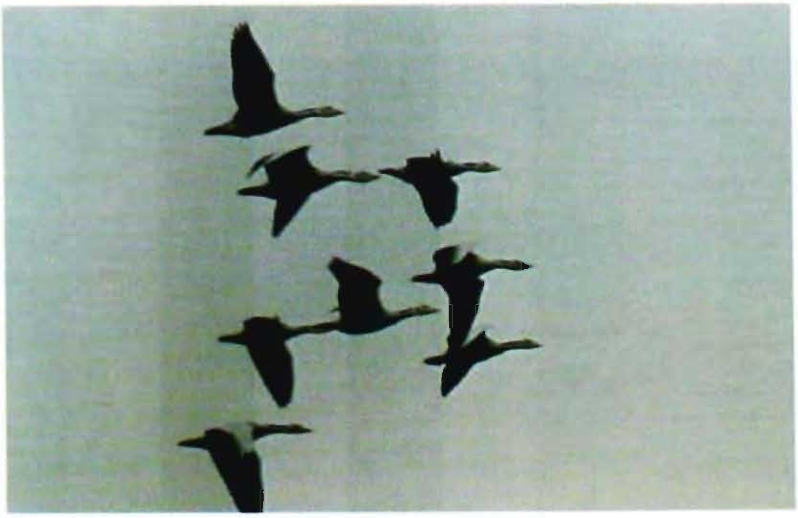
PLATE - VII

White breasted Waterhen foraging for food in the wetland

Northern Lapwing in open grassland

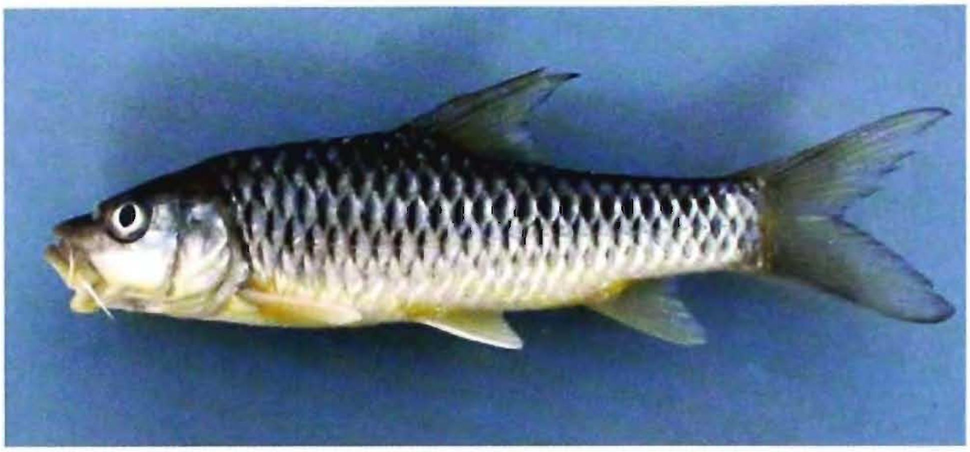
Purple Heron among reeds

Indian pond Heron among reeds

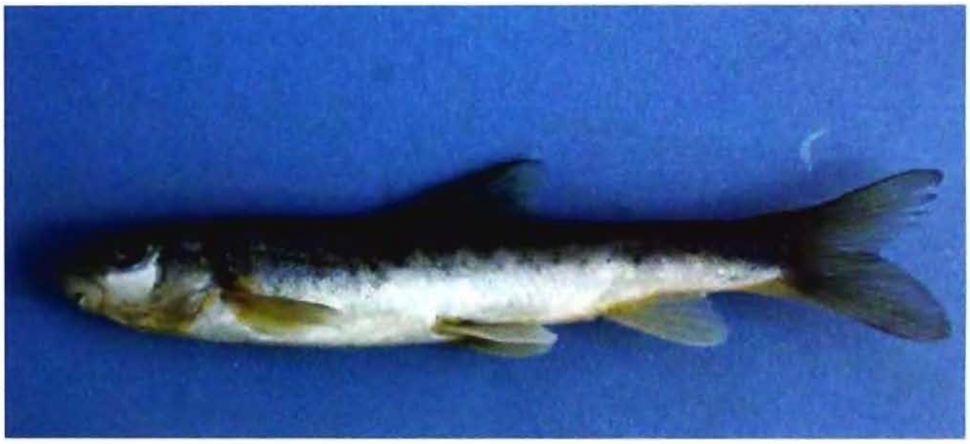


A View of Bar heading geese in flight

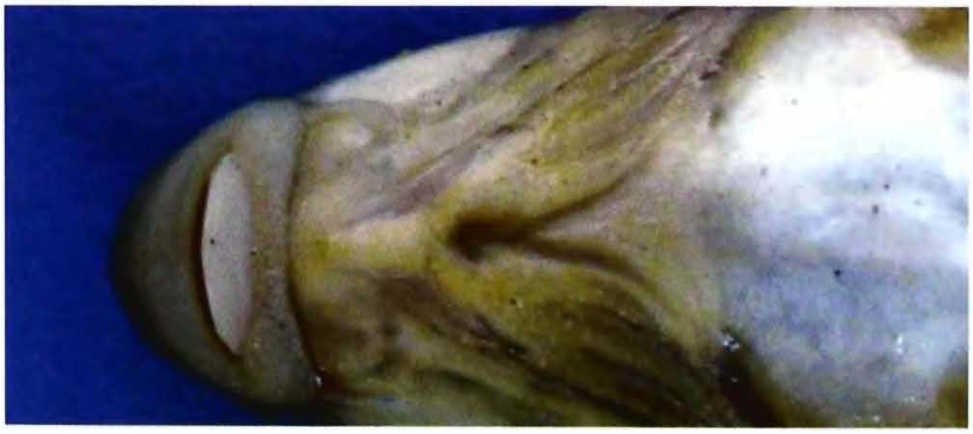
PLATE - VIII



Mahaseer fish (*Top putitora*)



Snow trout *Schizothroax richardosonii* (Grey)



A view of adhesive organ of *Schizothroax richardosonii* ecosystem biodiversity as they constitute important link in the food web and nutrient cycles. Kumar *et al.* (2005) has identified 310 species as Indian wetland birds, which includes 243 species as waterbirds and 67 species as wetland dependent and associated birds listed from India.

They are the life support systems in different regions of the world. Wetlands are often described as "kidneys of the landscape" (Mitsch and Gosselink, 1986).

The Pong Dam Wetland is also known as Maharana Pratap Sagar is situated at the base of Dhauladhar ranges in Kangra district of Himachal Pradesh. It is an important man made reservoir across the river Beas in Kangra valley being in one of the districts of the state of Himachal Pradesh in the lap of Shiwalik hills, situated at an altitude of 335-436 meters. This International important site (Ramsar Site No. 1211) was constructed in 1976 with the aims and objectives to generate the electricity and to bring more and more area under cultivation through canalization of water resources. As a result of damming at Talwara the area from Dehragopipur to Guglara with a length of 41.8 kms and a width of 19 km. has a maximum area of 307.29 km^2 developed into a reservoir. This reservoir is drained by five major streams like Ava, Moul, Gaj, Baner & Dehar emanating from the Dhauladhar ranges in the Kangra valley, besides, and several streamlets join the drainage system.

The entire reservoir has also been declared as Wildlife Sanctuary on 1st June, 1983 by Himachal Pradesh Government. A draw down area of about 50-220 km^2 gets exposed between the maximum and minimum water levels at the reservoir. The area was declared a National level wetland in 1994 by Ministry of Environment and Forests, Government of India, New Delhi. It lies in the low foothills of western Himalaya on the northern edge of Indo-Gangetic plain (coordinates 31°80'-32°07'26" north latitude and 75°80'-76°25' east longitude) at an elevation of about 450m above msl. Two major islands *viz.*, Ransar and Karu are present in the lake. During summer i.e March-June and in winter November-March most of the area is exposed. The exposed part is used for sowing of crops of wheat, mustard and other fodders. Due to this state insects orders like Lepidoptera, Orthoptera etc are studied and reportedThe area of the Wetland about 1.0 km in the radius gets exposed during winter and some part of summer season. The wheat crop is sown and harvested from this expodsed part of the wetland. Due to this some insect orders like Lepidoptera and Orthoptera, are taken into account in the present study.

The earthworms which play a significant role in the wetland ecosystem are studied and 12 new distribution record of this group are reported from this area. The Order Odonata where life histories are dependent upon the wetland, 15 species from different parts of the wetland is recorded. 38 species of Orthoptera and 52 species of Lepidoptera are recorded from the island and the exposded part of the Wetland during the lean period. The amphibians are reported by 8 species belonging to 3 families *i.e.* Ranidae, Bufonidae and Microhyladae representing common frogs, toads and burrowing frog. The fish fauna is represented by 57 speceis pertaining to different ecosystem of the wetland like hill stream fishes, endemic and exotoic species. Due to the change in the ecology of wetland *i.e.* from hill stream to the lacustrine habitat the endemic fauna is under threat. Among Reptile fauna a report of 15 species is also a new distribution record. The status of population of avian·fauna is reviewed and 418 species are recorded from the wetland. The abundance of population of Bar haeded geese during winter season is also assessed.

Values

i) The Pong Dam attracts large variety of migratory birds in winter and also supports number of indigenous birds.
ii) Regulates groung water of surrounding areas.
iii) Provides food fodder and fuels.
iv) Sources of livelihood for more than 1500 fishermen.
v) Prevents floods in the downstreams as well as laterally lying areas.
vi) Aesthetic setting for recreational activities and bird watching.
vii) Unique biodiversity of the area

Habitats

i) Mud flats and mud spits along the receding shore lines.
ii) Open deep blue water.
iii) Dry sand banks with little or no vegetations.
iv) Shallow water at the reservoir margin.

Climate : Summers are very hot with a maximum temperature of 44° C and winters are dry and cool with a minimum temperature of about 5.6° C. Average annual rainfall is about 1780 mm. The annual fluctuation of water level in the reservoir varies from 433 m during rainy season to 384 m during summer with maximum amplitude of 49 m. A vast area (more than two third) of the reservoir is exposed during summer due to receded water level.

Ecology : Due to the formation of large reservoir, many drastic changes in the ecology were brought in like submergence of various streams and streamlets resulting into direct or indirect impact on the fauna. As a result the impact on fauna is evident and will be more noticeable in the long run. For the last almost 30 years the population of the migratory birds has increased many folds possibly due to development of marshes and plenty of food availability. Several species of exotic fishes like *Cyprinus carpio comminus, Ctenopharyngodon idella* and *Hypothalmichthys molitrix.*

Vegetation : Pong dam sanctuary and catchments area of this reservoir is dominated by deciduous scrub, Himalayan subtropical pine forests, Khair plantations and dry bamboo brakes. The tree species adjacent to the reservoir are Acacia, Jamun, Shisham, Mango, Mulberry, Ficus, Kachanar, Amla and Prunus. A diversity of shrubs, grasses and climbers are also found in the sanctuary.

Commercialisation : The commercial fishing in the reservoir was initiated soon after. The total catch during the first year of fishing operation was 98 tonnes and increased progressively attaining a peak of 779 tones (1987-1988), fluctuating within a narrow range of 443-596 tonnes. The catch of mahseer in the reservoir has shown remarkable consistency during the past 10 years and landings have fluctuated between 50-80 tones. The highest catches of Mahseer were recorded during 1997- 98. Pong Dam is probably the only reservoir in the country, which provides the opportunity of Mahseer angling.

Threats : The migratory species of fishes like golden Mahseer, Snow trout and carp are fighting for survival since the reservoir came up and commercial species were introduced. Fishing and cultivation along the shoreline are a source of some disturbance, but there is reported to be little poaching. The most serious threat comes from agriculture and forestry malpractices in the water catchments area.

Important Statistics of Pong Dam Wetland

Water Source	:	Snow melt and monsoon rain
Height	:	132.59
Location height	:	435.86
Year of commissioning	:	1974
Purpose	:	Multipurpose
Catchment Area	:	12,562
Waterspread Area at FRL (Ha)	:	24529
Waterspread area at DSL (Ha)	:	14312
Avearage water spread areae (Ha)	:	14600
Mean depth (m)	:	75.0
Total length (Km)	:	41.8
Widest stretch (Km)	:	19.0
Shoreline development index	:	560.0
Annual water level fluctuation (m)	:	384-433
Maximum water level fluctuation	:	117.0
Gross storage capacity (mill. cub. m)	:	8570
Live storage capacity (mill. cub. m)	:	7771
Inflow (mill. cub. m.)	:	8215-13134
Outflow (mill. Cub. m.)	:	6855-13641

Surveys Undertaken : 10 extensive surveys were undertaken from 1996-2002 by various survey parties of High Altitude Zoology Field Station, Zoological Survey of India, Solan in different seasons to explore the faunal resources of Pong Dam Wetland and reports have been submitted. All the collected faunal wealth deposited at HAZFS, in National Zoological

Collection. Different methods material and techniques were used in whole study and these are given below :

Very little is known about faunal diversity of the Pong Dam wetland except for Aves and birds. In the present endeavor an attempt has been made to study some of the important groups like Odonates (Dragon and Damsel flies), Hemiptera (aquatic bugs), Pisces, Amphibian, Reptiles and Aves as per. In the present document details of the fauna studied is as follows :

S. No.	Faunal Group	No. of Genera	No. of Species
1	Oligochaeta	09	12
2	Odonata	10	15
3	Orthoptera	35	38
4	Lepidoptera	37	52
5	Pisces	32	57
6	Amphibia	07	08
7	Reptilia	14	15
8	Aves	65 (Families)	412
Total species			**609**

REFERENCES

Alfred, J.R.B., Das, A.K. and Sanyal, A.K. 2002. Ecosystem of India : Envis Centre *Zool. Surv. India*, Kolkata: 1-410.

Kumar, A., Sati, J.P. and Alfred, J.R.B. 2005 Handbook on Indian Wetland Birds and their conservation: i-xxvi; 1-468 (Published by the *Director, Zool. Surv. India*)

Prasad, S.N., Ramachandra, T.V., Ahalya, N., Sengupta, T., Kumar, A., Tiwari, A.K., Vijayan, V.S. and Vijayan, L.

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, **12** : 7-12, 2009

EARTHWORM (OLIGOCHAETA)

R. PALIWAL and J.M. JULKA
Zoological Survey of India, High Altitude Zoology Field Station, Solan–173 212

INTRODUCTION

Earthworms are found in all types of habitats with adequate moisture and organic matter for their survival and shelter. They are particularly abundant on the margins of wetlands where suitable shelter, soil moisture and plenty of food are available for their propagation. They, therefore, form major components among macro-invertebrates near all water bodies, particularly ponds and lakes. Rich vegetation is found in areas with soils that harbour high populations of earthworms. They play an important role in the break up of accumulated organic matter and incorporate it into the soil system. A considerable amount of nutrients released during this process are washed into nearby wetlands, thereby influencing their productivity. Some species of earthworms are very hydrophilous and live under submerged stones and litter. They are a source of food to some aquatic insect larvae, amphibians, fishes and water birds inhabiting the wetlands.

Studies on the earthworm diversity of wetlands are negligible in our country. Julka and Paliwal (2000) have given a detailed account on the Oligochaeta of Renuka wetland in the outer Himalaya of Himachal Pradesh. Earthworms of Pong wetland have not yet been explored. However, some species are known from the district Kangra in which this wetland is located (Stephenson, 1923; Gates, 1972; Julka, 1988, Paliwal, 1994 unpublished).

KEY TO IDENTIFIACTION OF EARTHWORMS

1. Setae 4 pairs on each segment 2
– Setae more than 8 on each segment 8
2. Male pores on segment xv .... *Allolobophora parva*
– Male pores behind segment xv 3
3. Male pores on segment xvii; seminal grooves absent 4
– Male pores on segment xviii; seminal grooves present 6

4. Dorsal pores and spermathecal pores absent; thin worms ..... *Ocnerodrilus occidentalis*

– Dorsal pores and spermathecal pores present; stout worms 5

5. Male pores discharging directly on body surface; paired genital papillae usually on segments xiii-xvi .... *Eutyphoeus incommodus*

– Male pores discharging through paired vestibula; paired genital papillae usually on segment ix, intersegmental furrows 14/15/16, 18/19 .... *Eutyphoeus waltoni*

6. Prostatic pores one pair, at anterior ends of short diagonal seminal grooves on segment xvii .... *Lennogaster chittagongensis*

– Prostatic pores 2 pairs, at ends of seminal grooves on segments xvii and xix 7

7. Short worms, 19-23 mm long; clitellum xiv-xx; spermathecal pores in furrows 7/8/9 .... *Dichogaster bolaui*

– Long worms, 40-123 mm long; clitellum xiii-xvii; spermathecal pores on segments viii and ix .... *Octochaetona beatrix*

8. Colour reddish to violet; nephridiopores obvious; gizzard vestigial in segment v or vi 9

Colour brown to gray; nephridiopores inconspicuous; gizzard large in segment viii 10

9. Spermathecal pores 2 pairs, in furrows 7/8/9; nephridiopores in a single rank .... *Perionyx excavatus*

– Spermathecal pores 3 pairs, in furrows 6/7/8/9; nephridiopores in two ranks, alternating between adjacent segments .... *Perionyx sansibaricus*

10. Male pores discharging directly on to body surface .... *Amynthas corticis*

Male pores discharging in to copulatory pouches, opening on to body surface through secondary male pores 11

11. Spermathecal pores 3 pairs, in furrows 6/7/8/9; genital papillae not obvious .... *Metaphire houlleti*

– Spermathecal pores 4 pairs, in furrows 5/6/7/8/9; genital papillae distinct, paired usually on segments xvii and xix .... *Metaphire posthuma*

SYSTEMATIC LIST

Family LUMBRICIDAE

Genus *Allolobophora* Eisen

1. *Allolobophora parva* Eisen

Material examined : 0-0-3 Lake below Pong Dam, 12 Dec 1997, R. Paliwal; 0-0-21 Balli-Sthana, 13 Dec 1997, R. Paliwal; 0-0-2 Balli-Sthana, 12 Nov 1998, R. Paliwal; 0-0-2 Meenu

Khud, 4 km from Nagrota Surian, 10 Feb 1999, T.R. Sharma; 0-4-7 Baner Khud, 10 km from Nagrota Surian, 12 Feb 1999, T.R. Sharma; 0-1-13 Beli village, 7 km from Pong dam, 28 Jan 2000, H.S. Mehta.

Distribution : India : Himalayan states, Uttar Pradesh, Bihar, Rajasthan, Tamil Nadu.

Elsewhere : Endemic in North America, distributed worldwide in temperate climate areas.

Remarks : It is a very small worm of reddish colour, generally found in decaying wood and forest litter.

Family OCNERODRILIDAE

Genus *Ocnerodrilus* Eisen

2. *Ocnerodrilus occidentalis* Eisen

Material examined : 2-2-13 Baner Khud about 10 km from Nagrota Surian, 12 Feb 1999, T.R. Sharma.

Distribution : India : Jammu & Kashmir, Himachal Pradesh, Uttranchal, Uttar Pradesh, Orissa, Rajasthan, Madhya Pradesh, Maharashtra, Karnataka, Kerala, Andaman & Nicobar Islands.

Elsewhere : Widely distributed at places with tropical and subtropical climate in South and Southeast Asia, Southwest Africa, Europe, Mexico, U.S.A.

Remarks : It is abundantly found in semi-aquatic habitats and in soil around roots of aquatic weeds. It also inhabits pastures, crop fields, compost pits and sewage.

Family OCTOCHAETIDAE

Genus *Dichogaster* Beddard

3. *Dichogaster bolaui* (Michaelsen)

Material examined : 1-2-1 Mala near Nandpur Bhatoli, 10 Oct 1999, R. Paliwal.

Distribution : India : Cosmopolitan.

Elsewhere : Endemic in tropical Africa, distributed worldwide due to transportation.

Remarks : It inhabits topsoil with high organic matter; drains soil around compost pits, under litter, dung and stones, in rotten wood. It possibly plays an important role in converting organic matter into available nutrients.

Genus *Eutyphoeus* Michaelsen

4. *Eutyphoeus incommodus* (Beddard)

Material examined : 0-0-1 Near Harsar, 10 Oct 1999, T.R. Sharma; 3-0-5 Maleta near Nandpur Bhatoli, 10 Oct 1999, R. Paliwal.

Distribution : India : Gangetic Plains, foot hills of the Himalaya, Madhya Pradesh.

Elsewhere : Pakistan.

Remarks : It is geophagous species and lives in deeper soil layers.

5. ***Eutyphoeus waltoni*** Michaelsen

Material examined : 0-0-4 Dehra Gopipur, 7 Oct 1999, R. Paliwal; 0-0-1 Dehra Gopipur, 12 Oct 1999, T.R. Sharma.

Distribution : India: Gangetic Plains, foot hills of the Himalaya, Gujarat, Madhya Pradesh.

Elsewhere : Pakistan.

Remarks : *Eutyphoeus waltoni* inhabits deeper soil layers and deposits large-sized tower-like casts on the soil surface. It is generally found under trees and bushes.

Genus ***Lennogaster*** Gates

6. ***Lennogaster chittagongensis*** (Stephenson)

Material examined : 2-1-12 Balghar near Dadasiba, 5 Oct 1999, R. Paliwal; 0-0-4 Bari near Dehra Gopipur, 8 Oct 1999, R. Paliwal.

Distribution : India : Jammu & Kashmir, Himachal Pradesh.

Elsewhere : Bangladesh, Myanmar.

Remarks : It is litter dwelling and remains within top 5 cm soil with high organic matter.

Genus ***Octochaetona*** Gates

7. ***Octochaetona beatrix*** (Beddard)

Material examined : 1-2-1 Mala near Nandpur Bhatoli, 10 Oct 1999, R. Paliwal.

Distribution : India : Gangetic Plains, foot hills of the Himalaya, Orissa, Madhya Pradesh, Gujarat, Maharashtra, Goa, Karnataka, Kerala.

Elsewhere : Pakistan, Nepal, Myanmar, Malay Peninsula, Philippines.

Remarks : It commonly occurs in soil with low organic matter usually in grassy patches.

Family MEGASCOLECIDAE

Genus ***Amynthas*** Kinberg

8. ***Amynthas corticis*** (Kinberg)

Material examined : 0-0-1 Siul Khud Landiara, 6 Oct 1999, R. Paliwal.

Distribution : India : Himalaya, NE Hill Ranges, hilly parts of Tamil Nadu and Karnataka.

Elsewhere : South and Southeast Asia, Australia, New Zealand, South Africa, Madagascar, Europe, North and South America.

Remarks : *Amynthas corticis* is a very active earthworm and when disturbed responds in serpentine manner. It has some potential in vermi-composting technology.

Genus *Metaphire* Sims & Easton

9. *Metaphire houlleti* Perrier

Material examined : 0-0-70 Bari near Dehra Gopipur, 8 Oct 1999, R. Paliwal; 0-0-1 Dehri Khud Saner, 8 Oct 1999, T.R. Sharma; 0-0-11 Mala near Nandpur Bhatoli, 10 Oct 1999, R. Paliwal; 0-3-3 Dehra Gopipur, 13 Oct 1999, T.R. Sharma.

Distribution : India: Lower altitudes of western Himalaya and West Bengal, Meghalaya, Madhya Pradesh, Gujarat, Maharashtra, Tamil Nadu, Karnataka, Kerala, Andaman & Nicobar Islands.

Elsewhere : Indian subcontinent, Southeast Asia, Australia, Madagascar, France, Bahamas, Cuba, U.S.A., Salvador, French Guyana.

Remarks : It is quite common in soils rich in organic matter.

10. *Metaphire posthuma* (Vaillant)

Material examined : 0-0-3 Balli-Sthana, 13 Dec 1997, R. Paliwal; 0-0-15 Nagrota Surian, 7 Nov 1998, R. Paliwal; 0-0-1 Balli-Sthana, 12 Nov 1998, R. Paliwal: 12-0-0 Bhambir Nala, 2 June 1999, T.R. Sharma; 0-0-2 Dehri Khud Saner, 8 Oct 1999, T.R. Sharma; 0-3-9 Thangar near Jawali, 11 Oct 1999 R. Paliwal; 0-18-25 Balli-Sthana, 14 Oct 1999, R. Paliwal.

Distribution : India: Gangetic Plains, Orissa, Madhya Pradesh, Gujarat, Maharashtra, Andaman & Nicobar Islands.

Elsewhere : Pakistan, Bangladesh, Myanmar, Southeast Asia.

Remarks : It inhabits subsoil at 10-20 cm depth in sandy loam soil. Its casts are in the form of loose spherical pellets. It prefers poor soils on the banks of water bodies and semi-dried up beds of watercourses.

Genus *Perionyx* Perrier

11. *Perionyx excavatus* Perrier

Material examined : 1-2-1 Balli-Sthana, 13 Dec 1997, R. Paliwal; 11-9-3 Siul Khud Landiara,, 6 Oct 1999, R. Paliwal.

Distribution : India : Cosmopolitan.

Elsewhere : Southeast Asia, Indonesia, Philippines, Fiji, Samoa, Hawaii, South Africa, Madagascar, Comoro, Mauritius, Seychelles Archipelago, Reunion, Dominica.

Remarks It thrives well in rich and moist organic materials (litter, dung, and agricultural wastes) and can easily be used as an organic waste conditioner. As this species can easily be cultured, it can also provide animal protein for utilization in poultry and fish feed.

12. ***Perionyx sansibaricus*** Perrier

Material examined : 0-0-8 Bhatoli, 18 Dec 1997, I.J. Gupta; 2-0-1 about 10 km from Nagrota Surian, 12 Feb 1999, T.R. Sharma.

Distribution : India: Foot hills of Himachal Pradesh and Uttranchal, Madhya Pradesh, Gujarat, Maharashtra, Karnataka, Tamil Nadu, Kerala.

Elsewhere : Zanzibar.

Remarks : It has also some composting potential.

REFERENCES

Gates, G.E. 1972. Burmese earthworms. An introduction to the systematics and biology of megadrile oligochaetes with special reference to southeast Asia. *Trans. Am. phil. Soc.*, **67**(7) : 1-326.

Julka, J.M. 1988. *The Fauna of India and the adjacent countries, Megadrile Oligochaeta, Octochaetidae*, 392 pp. Zoological Survey of India, Calcutta.

Paliwal, R. 1994 (unpublished). *Taxonomy and ecology of earthworms of western Himalaya.* Ph.D. Thesis, Ch. Charan Singh University, Meerut.

Stephenson, J. 1923. *Oligochaeta. The Fauna of British India, including Ceylon and Burma*, 518 pp. Taylor and Francis Ltd., London.

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, **12** : 13-19, 2009

INSECTA : ODONATA

R. BABU*, H.S. MEHTA, and SAINI KAMAL
Zoological Survey of India, High Altitude Zoology Field Station, Solan-173 212

INTRODUCTION

The order Odonata comprises the dragonflies and small damselflies. Dragonflies are strong fliers with fairly robust bodies and at rest hold their wings either out to the side or out and downward (or even somewhat forward). Damselflies tend to be less robust, even rather weak appearing in flight, and when at rest most species hold their wings folded back over the abdomen. Economically they are of great importance in destroying the noxious flies, mosquitoes and moths. The literature reveals that the Odonata fauna of Himachal Pradesh is confined to the work of Fraser (1933, 1934, 1936), Prasad (1976), Kumar and Prasad (1981), and Kumar (2000, 2005). Since there is no comprehensive account of Odonata fauna of Pong wet land, the present report forms the first authentic report. Created by damming the Beas River in 1976 and lying between the outer Siwaliks and Daula Dhar, Pong Dam is the largest standing water body in Himachal Pradesh situated in Kangra District on the border with Punjab State.

The specimens were collected by the various staffs of High Altitude Zoology Field Station, Zoological Survey of India, Solan from the Pong wetland. The specimens were compared with the standard descriptions given by Fraser (1933-1936) and Mitra (2002). The classification followed here is after Prasad and Varshney (1995). The present report deals with the 15 species belong to 10 genera under four families. The studied specimens are deposited in the High Altitude Zoology Field Station, Zoological Survey of India, Solan.

SYSTAMATIC LIST

Order ODONATA

Suborder ZYGOPTERA

Genus ***Ceriagrion*** Selys

1. *Ceriagrion coromandelianum* (Fabricius)

---

*Zoological Survey of India, M-Block, New Alipore, Kolkata-700 053.

Superfamily CALOPTERYGOIDEA

Family CALOPTERYGIDAE

Genus ***Neurobasis*** Selys

2. *Neurobasis chinensis chinensis* (Linnaeus)

Family CHLOROCYPHIDAE

Genus ***Rhinocypha*** Rambur

3. *Rhinocypha quadrimaculata* Selys

Suborder ANISOPTERA

Superfamily LIBELLULOIDEA

Family LIBELLULIDAE

Genus ***Brachythemis*** Brauer

4. *Brachythemis contaminata* (Fabricius)

Genus ***Crocothemis*** Brauer

5. *Crocothemis servilia servilia* (Drury)

Genus ***Neurothemis*** Brauer

6. *Neurothemis tullia tullia* (Drury)

Genus ***Orthetrum*** Newman

7. *Orthetrum glaucum* (Brauer)
8. *Orthetrum japonicum internum* MacLachlan
9. *Orthetrum pruinosum neglectum* (Rambur)
10. *Orthetrum sabina sabina* (Drury)

Genus ***Palpopleura*** Rambur

11. *Palpopleura sexmaculata sexmaculata* (Fabricius)

Genus ***Rhyothemis*** Hagen

12. *Rhyothemis variegata variegata* (Linnaeus)

Genus ***Trithemis*** Brauer

13. *Trithemis aurora* (Burmeister)
14. *Trithemis festiva* (Rambur)
15. *Trithemis kirbyi kirbyi* Selys

SYSTAMATIC ACCOUNT

Genus ***Ceriagrion*** Selys

1. ***Ceriagrion coromandelianum*** (Fabricius)

1798. *Agrion coromandelianum* Fabricius, *Ent. Syst. Suppl.*, p. 287.

1876. *Ceriagrion coromandelianum* Selys, *Bull. Acad. Belg.*, (2)**42** : 528.

1933. *Ceriagrion coromandelianum*, Fraser, *Fauna Brit. India, Odonata.*, **1** : 315-316.

Material examined : 1♂, 1♀, Pong dam, 6.10.1999, Coll. M.S. Verma.

Distribution : Throughout India.

Genus *Neurobasis* Selys

2. *Neurobasis chinensis chinensis* (Linnaeus)

1758. *Libellula chinensis* Linnaeus, *Syst. Nat.*, **10** : 545.

1890. *Neurobasis chinensis* Kirby, *Syn. Cat. Neur. Odon.*, p. 102.

1934. *Neurobasis chinensis*, Fraser, *Fauna Brit. India, Odonata.*, **2** : 121-124.

Material examined : 1♂, Pong dam, 6.10.1999, Coll. M.S. Verma; 1♂, Pong dam, 8.10.1999, Coll. R. Paliwal.

Distribution : Arunachal Pradesh, Assam, Himachal Pradesh, Maharashtra, Manipur, Mizoram, Nagaland, Orissa, South India, Uttar Pradesh, Uttarakhand.

Genus *Rhinocypha* Rambur

3. *Rhinocypha quadrimaculata* Selys

1853. *Rhinocypha quadrimaculata* Selys, *Bull. Acad. Belg.* 20 (Annexe) *Syn. Calopt.* p. 60.

1934. *Rhinocypha quadrimaculata*, Fraser, *Fauna Brit. India, Odonata.*, **2** : 14-17.

Material examined : 2♂, 1♀, Gaj khad, Nagrota Suria, 9.05.2007, Coll. Indu Sharma.

Distribution : Arunachal Pradesh, Assam, Himachal Pradesh, Kashmir, Madhya Pradesh, Manipur, Meghalaya, Orissa, Sikkim, Uttarakhand, West Bengal.

Genus *Brachythemis* Brauer

4. *Brachythemis contaminata* (Fabricius)

1793. *Libellula contaminata* Fabricius, *Ent. Syst.* 2 : 382.

1868. *Brachythemis contaminata*, Brauer, *Verh. Zool.-bot. Ges. Wein.*, **18** : 736.

1936. *Brachythemis contaminate*, Fraser, *Fauna Brit. India, Odonata.*, **3** : 365-366.

Material examined : 1♂, 1♀, Pong dam, 8.10.1999, Coll. R. Paliwal.

Distribution : Widely distributed throughout India.

Genus *Crocothemis* Brauer

5. *Crocothemis servilia servilia* (Drury)

1770. *Libellula servilia* Drury, *Ill. Exotic Ins.*, **1** : 112-113.

1868. *Crocothemis servilia* Brauer, *Verh. Zool.-bot. Ges. Wein.*, **18** : 737.
1936. *Crocothemis servilia servilia* Fraser, *Fauna Brit. India, Odonata.*, **3** : 345-347.

Material examined : 1♂, Gajkhud, Nagrota Suria, 19.05.2007, Coll. Indu Sharma.

Distribution : Throughout India.

Genus ***Neurothemis*** Brauer

6. ***Neurothemis tullia tullia*** (Drury)

1773. *Libellula tullia* Drury, *Ill. Exot. Ins.*, **2** : 85.
1890. *Neurothemis tullia*, Kirby, *Syn. Cat. Neur. Odon.*, p. 8.
1911. *Neurothemis tullia tullia*, Ris, *Cat. Coll. Selys*, fasc. **13** : 551.
1936. *Neurothemis tullia tullia*, Fraser, *Fauna Brit. India, Odonata.*, **3** : 360-362.

Material examined : 1♂, Pong dam, 8.10.1999, Coll. R. Paliwal.

Distribution : Throughout India.

Genus ***Orthetrum*** Newman

7. ***Orthetrum glaucum*** (Brauer)

1865. *Libellula glauca* Brauer, *Verh. Zool.-bot. Ges. Wein.*, **18** : 1012.
1890. *Orthetrum glaucum*, Kirby, *Syn. Cat. Neur. Odon.*, p. 39.
1936. *Orthetrum glaucum*, Fraser, *Fauna Brit. India, Odonata.*, **3** : 307-309.

Material examined : 2♂, Jawali, Deharkhud, 20.05.2007, Coll. Indu Sharma.

Distribution : Throughout India.

8. ***Orthetrum japonicum internum*** MacLachlan

1894. *Orthetrum japonicum internum* MacLachlan, *Ann. Mag. Nat. Hist.*, (6) **13** : 431.
1936. *Orthetrum japonicum internum*, Fraser, *Fauna Brit. India, Odonata.*, **3** : 304-305.

Material examined : 1♂, Thangar near Jawalji, Kangra, 11.10.1999, Coll. R. Paliwal.

Distribution : Arunachal Pradesh, Assam, Himachal Pradesh, Kashmir, Meghalaya, Nagaland.

9. ***Orthetrum pruinosum neglectum*** (Rambur)

1842. *Libellula neglecta* Rambur, *Ins. Neurop.*, p. 86.
1909. *Orthetrum pruinosum neglectum*, Ris, *Cat. Coll. Selys* fasc. **9**: 181.
1936. *Orthetrum pruinosum neglectum*, Fraser, *Fauna Brit. India, Odonata.*, **3** : 311-313.

Material examined : 1♂, Siulkhud, Lanchara Dadaiba, Kangra, 6.10.1999, Coll. M.S. Verma; 1♂, Dehra Gopipur, Kangra, 8.10.1999, Coll. R. Paliwal; 2♂, Thangar near Jawali, Kangra, 11.10.1999, Coll. R. Paliwal; 1♂, Gajkhud, Nagrota Suria, Kangra, 19.05.2007, Coll. Indu Sharma.

Distribution : Widely distributed throughout India.

10. ***Orthetrum sabina sabina*** (Drury)

1770. *Libellula sabina* Drury, *Ill. Exot. Ins.*, **1** : 114.

1889. *Orthetrum sabina* Kirby, *Trans. zool. Soc. Lond.*, **12** : 302.

1954. *Orthetrum sabina Sabina* Lieftinck, *Treubia,* **22** (suppl.): 137.

Material examined : 1♂, Pong dam, Kangra, 6.10.1999, Coll. R. Paliwal; 3♂, Suknada, Kangra, 9.10.1999, Coll. R. Paliwal; 2♂, Thangar near Jawali, Kangra, 10.10.1999, Coll. M.S. Verma; 2♂, Thangar near Jawali, Kangra, 11.10.1999, Coll. R. Paliwal.

Distribution : Throughout India.

Genus ***Palpopleura*** Rambur

11. ***Palpopleura sexmaculata sexmaculata*** (Fabricius)

1787. *Libellula sexmaculata* Fabricius, *Mant. Ins.*, **1** : 338.

1868. *Palpopleura sexmaculata* Brauer, *Verh. Zool.-bot. Ges. Wien.*, **18** : 716.

1936. *Palpopleura sexmaculata sexmaculata* Fraser, *Fauna Brit. India, Odonata.*, **3** : 318-320.

Material examined : 3♂, 5♀, Thangar near Jawali, 11.10.1999, Coll. M.S. Verma.

Distribution : Throughout India.

Genus ***Rhyothemis*** Hagen

12. ***Rhyothemis variegata variegata*** (Linnaeus)

1763. *Libellula variegata* Linnaeus, *Amoenitates Acad.*, **6** : 412.

1867. *Rhyothemis variegata* Hagen, *Stett. Ent. Zeit.*, **28** : 232.

1936. *Rhyothemis variegata,* Fraser, *Fauna Brit. India, Odonata.*, **3** : 423-424.

Material examined : 1♀, Pong dam, 8.10.1999, Coll. R. Paliwal.

Distribution : Throughout India.

Genus ***Trithemis*** Brauer

13. ***Trithemis aurora*** (Burmeister)

1839. *Libellula aurora* Burmeister, *Handb. Ent.*, **2** :859.

1868. *Trithemis aurora* Brauer, *Verh. zool.-bot. Ges. Wein.*, **18** : 177.

1936. *Trithemis aurora,* Fraser, *Fauna Brit. India, Odonata.*, **3** : 383-385.

Material examined : 1♂, Pong dam, 6.10.1999, Coll. M.S. Verma; 1♀, Pong dam, 9.10.1999, Coll. R. Paliwal; 1♂, Thangar near Jawali, 10.10.1999, Coll. M.S. Verma; 1♂, Gajkhud, Nagrota Suria, 19.05.2007, Coll. Indu Sharma.

Distribution : Throughout India.

14. ***Trithemis festiva*** (Rambur)

1842. *Libellula festiva* Rambur, *Ins. Neurop.*, p. 92.
1868. *Trithemis festiva*, Brauer, *Verh. zool.-bot. Ges. Wein.*, **18** : 736.
1936. *Trithemis festiva*, Fraser, *Fauna Brit. India, Odonata.*, **3** : 387-389.

Material examined : 8♂, Gajkhud, Nagrota Suria, 19.05.2007, Coll. Indu Sharma; 2♂, Jawali, Deharkhud, 20.05.2007, Coll. Indu Sharma.

Distribution : Throughout India.

15. ***Trithemis kirbyi kirbyi*** Selys

1896. *Trithemis aurora* Kirby, *Proc. Zool. Soc. London*, p. 327.
1936. *Trithemis kirbyi kirbyi*, Fraser, *Fauna Brit. India, Odonata.*, **3** : 385-387.
1995. *Trithemis kirbyi kirbyi*, Prasad and Varshney, *Oriental Insects*, **29** : 411.

Material examined : 1♂, Pong dam, 8.10.1999, Coll. R. Paliwal.

Distribution : South and North India.

SUMMARY

The present faunal study is based upon collections of Odonates from Pong wetland, comprising 15 species under 10 genera belonging to four families.

REFERENCES

Fraser, F.C. 1933. *Fauna of British India including Ceylon and Burma, Odonata,* Vol. 1, p. XIII+423, Taylor and Francis, London.

Fraser, F.C. 1934. *Fauna of British India including Ceylon and Burma, Odonata*, Vol. 2, p. XIII+398, Taylor and Francis, London.

Fraser, F.C. 1936. *Fauna of British India including Ceylon and Burma, Odonata*, Vol. 3, p. XII+461, Taylor and Francis, London.

Kumar, A. 2000. Odonata. In : *Fauna of Renuka Wetland, Wetland Ecosystem Series*, **2** : 45-53. Zoological Survey of India.

Kumar, A. 2005. Odonata. In : *Fauna of Western Himalaya (Part 2) Himachal Pradesh.* pp. 75-98, Zoological Survey of India.

Kumar, A. and Prasad, M. 1981. Field ecology, zoogeography and taxonomy of the Odonata of Western Himalaya, India. *Rec. zool. Surv. India, Occ. Paper No.,* **20** : 1-118.

Mitra, T.R. 2002. *Geographical distribution of Odonata (Insecta) of Eastern India. Memoirs zool. Surv. India,* **19**(1) : 1-208.

Prasad, M. 1976. Odonata of district Kangra (Himachal Pradesh). *Rec. zool. Surv. India,* **71** : 95-119.

Prasad, M. and Varshney, R.K. 1995. A check-list of the Odonata of India, including data on larval studies. *Oriental Insects,* **29** : 385-428.

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, **12** : 21-41, 2009

INSECTA : LEPIDOPTERA : RHOPALOCERA

KAMAL SAINI, AVTAR KAUR SIDHU AND H.S. MEHTA
Zoological Survey of India, High Altitude Zoology Field Station, Solan–173 212

INTRODUCTION

Lepidoptera is the second largest order of insects comprising 2, 60,000 species of butterflies and moths. More than 17, 000 species of butterflies are known from world, of which 1,500 species (8.66%) are known from India. Butterflies are an important component of ecosystem. Apart from aesthetic appeal, they are good bioindicators to depict the health of habitat. In the present work 52 species of butterflies have been collected during various surveys from Pong Dam wetland referable to seven families viz., Papilionidae (02 species), Pieridae (14 species), Danaidae (03 species), Satyridae (05 species), Nymphalidae (14 species), Lycaenidae (11 species) and Hesperiidae (03 species). The brief account of these species is as below.

I. Family PAPILIONIDAE

1. *Papilio polites f. romulus* Cramer

(The Common Mormon)

1775. *Papilio romulus* Cramer, *Pap.Exot.*, **1** : 67.

Material : 06, 9.X.1999, 30.IX.2000

Locality : Suknada, Sthana.

Collector Name : R. Palliwal & Party, M.S. Thakur

Diagnostic Features : Predominantly black. Forewing upperside with a terminal series of white spots, which decrease in size towards apex. Hindwing upperside with a well developedmedial band of whitish elongated spots; Head and thorax anteriorly above and head, thorax and abdomen below spotted with white.

Distribution : Throughout India.

Elsewhere : Myanmar, Ceylon.

2. ***Papilio demoleus demoleus*** Linnaeus
(The Lime Butterfly)

1758. *Papilio demoleus* Linnaeus, *Syst. Nat.*, 10th ed : 464.

Material : 03, 9.X.1999, 30.IX.2000

Locality : Suknada, Sthana

Collector Name : M.S. Verma, G.S. Arora & M.S. Thakur

Diagnostic Features : Head, thorax and abdomen dusky black above, the latter with lateral longitudinal lines. Underside with the markings paler and larger. Hindwings at base, creamy-yellow margined with black; a large eye like ring spot below upper margin; The species is very common where lime, citrus and bael is cultivated.

Distribution : It has been recorded from Bilaspur, Kangra, Mandi, Shimla, Sirmour and Solan districts in Himachal Pradesh during April to December, upto an altitude of 7000'.

Elsewhere : Myanmar and Sri Lanka.

II. Family PIERIDAE

3. ***Leptosia nina nina*** (Fabricius)
(The Psyche)

1793. *Papilio nina* Fabricius, *Ent. Syst.*, 3(i) : 194.

Material : 05, 2.X.2000, 30.IX.2000, 23.XII.2001

Locality : Pong Dam, Sthana, Nagrota Surian

Collector Name : G.S. Arora & M.S. Thakur, M.S. Thakur

Diagnostic Features : Whitish. Head brownish; the antennae dark brown, spotted with white; thorax and abdomen whitish, forewings with the upper margin speckled dark with black; Hindwings white.

Distribution : Presently, this species has been recorded at low elevations in Kangra district of Himachal Prades, during September, for the first time.

4. ***Colios erate erate*** (Esper)
(The Pale Clouded Yellow)

1805. *Papilio erate* Esper, *Die. schmetherlinge*, 2 : 13.

Material : 02, 17.XII.1997

Locality : Kherian

Collector Name : I.J. Gupta & Party

Diagnostic Features : Male with wings dorsally lemon yellow in colour, with broad black border and prominent black spot at end cell; underside of wings lemon yellow; female pale yellow or white,with spots of ground colour on the dark brown border and a black spot at end cell; under side of wings in both sexes; underside of wings pale yellow or white.

Distribution : Chitral to Kumaon.

5. ***Cepara nerissa phryne*** (Fabr.)
(The Common Gull)

1775. *Papilio phryne* Fabricius, *Syst. Ent.* : Pl. II, fig. 7.

Material : 02, 18.XII.1997

Locality : Bhatoli

Collector Name : I.J. Gupta & Party

Diagnostic Features : Male with upperside of wings white, with some veins blackened, forewing with apical area black, bearing prominent white spots, hindwing with marginal border black, latter dentate on innerside; underside of hindwing pale or dark yellow with veins heavily outlined in green, with a prominent submarginal dusky band; female wings upperside black markings more extensive; fore wing with additional spot in 1b; underside of wings as in male. In dry season form both in male and female black markings reduced, especially on hindwing.

Distribution : Throughout India.

6. ***Delias eucharis*** (Drury)
(The Common Jezebel)

1773. *Papilio eucharis* Drury, *Illust. Nat. Hist. Exot. Insects* 2 : index, 17, pl. 10, f. 5-6.

Material : 02, 11.X.1999, 12.X.1999

Locality : Thangar, Balghar

Collector Name : R. Paliwal & Party, M.S. Verma

Diagnostic Features : Male Forewings whitish; all the veins blackened, the black expanding at outer margin, Hindwings uniformly yellowish from base to slightly middle of outer margin black line beyond which the marginal spots large, pointed and brick red.

Distribution : From Himachal Pradesh, it has been recorded from the Kangra, Mandi, Shimla, Sirmour and Solan districts.

7. ***Anaphaeis aurota aurota*** (Fabr.)
(The Pioneer)

1793. *Papilio aurota* Fabricius, *Ent. Syst.*, 3(1) : 197.

Material : 1, 18.XII.1997

Locality : Dehra Gopipur

Collector Name : I.J. Gupta & Party

Diagnostic Features : Male and female white. Head with the antennae black, sparsely dotted with white; head, thorax and abdomen white above, thorax often bluish-grey.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Kangra and Shimla districts between April and July.

8. ***Pieris canidia indica*** Evans
(The Indian Cabbage White)

1926. *Pieris canidia indica* Evans, *J. Bombay nat. Hist. Soc.*, **31** : 312.

Material : 26, 12.X.1999, 17.XII.1997, 19.V.1999, 14.XII.1997,

Locality : Ghar Jarot, Harsar, Meteta, Samkad Pateki, Kherian, Kalesh

Collector Name : R. Paliwal & Party, I.J. Gupta & Party, T.R. Sharma & Party,

Diagnostic Features : Male and female white; Hindwings: Upper margin with a black spot; terminal black spots at vein-ends 3 to 6 in male, Hindwings strongly dusted with black thin covering nearly throughout, heavily at costa, leaving a yellowish area with a long stripe from base through cell.

Distribution : From Himachal Pradesh, this has been recorded from Bilaspur, Chamba, Hamirpur, Kangra, Shimla, Sirmour, Solan and Una districts and ascends upto an altitude of about 12500' in Himalayas.

9. ***Pieris brassicae nepalensis*** Doubleday
(The Large Cabbage White)

1846. *Pieris brassicae* var. *nepalensis* Doubleday,*Gen. Diur. Lep.*, **1** : 9.

Material : 03, 17.XII.1997, 6.X.1999

Locality : Harsar, Siul Khud

Collector Name : I.J. Gupta & Party, R. Palliwal & Party

Diagnostic Features : Head with the antennae black, the club tipped with white; Head, thorax and abdomen with some white hairs; underside whitish. Female Generally similar to male but the dusting more heavy and Underside wing tip and marginal border reddish yellow.

Distribution : From Himachal Pradesh, it has been recored from Bilaspur, Hamirpur, Kangra, Kinnaur, Kullu, Shimla, Sirmour, Solan and Una districts.

10. ***Pontia daplidice moorei*** (Linn.)
(The Bath White)

1907. *Leucochloe daplidice moori* Rober, *Marcolep.*, **1** : 39-71.

Material : 01, 9.X.1999

Locality : Suknada

Collector Name : Dr. R. Palliwal & Party

Diagnostic Features : A black or greenish black spot in the outer half of area 1 b, arounded white spot in middle of cell, and another spot above it in area 7 and a marginal series of white spots in areas 1 to 6. Upperside male white with basal of costa narrowly dusted with black. Female basal area dusted with black, extending upto large discocellular patch.

Distribution : This is primarily a butterfly of the high inner hills.

11. ***Ixias pyrene kausala*** (Moore)
(The Yellow Orange Tip)

1877. *Ixias kausala* Moore, *Ann. Mag. nat.Hist.*, **20**(4) : 49.

Material : 03, 01.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party

Diagnostic Features : Male Yellowish. Forewings dusted at base with black; Hindwings yellowish, hind angle border black Female : Wings yellowish, or white as in male. In latter case the band on forewings is also whitish and not orange; basal half of both wings dusted with black.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kinnaur, Shimla, Sirmour and Solan districts from July to October.

12. ***Catopsilia crocale*** (Cramer)
(The Common Emigrant)

1775. *Papilio crocale* Cramer, *Pap. Exot.*, **1** : 87.

Material : 05, 23.I.2000, 9.X.1999, 14.XII.1997

Locality : Dhemate, Suknada, Samkad Pateki

Collector Name : H.S. Mehta & Party, R. Palliwal & Party, I.J. Gupta & Party

Diagnostic Features : Head with the antennae red or black. Male Forewings chalky white, partly or entirely yellowish to sulphur yellow. Hindwings unmarked; hind margin narrowly black.

Distribution : From Himachal Pradesh, this has been recorded from Bilaspur, Kangra, Kullu, Mandi, Shimla, Sirmour and Solan districts during July to October.

13. ***Catopsilia pyranthe*** (Linn.)
(The African Emigrant)

1758. *Papilio pyranthe* Linn. *Syst. Nat.*, **10th ed.** : 469.

Material : 14, 10.X.1999, 12.X.1999, 19.XII.1997, 2.X.2000

Locality : Maha Bridge, Ghar Jarot, Nandpur, Pong Dam

Collector Name : R. Palliwal & Party, I.J. Gupta & Party, G.S. Arora & Party

Diagnostic Features : Head with the antennae reddish; head and thorax anteriorly brown, thorax clothed posteriorly with long white hairs; abdomen white. Underside whitish.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Hamirpur, Kangra, Kullu, Shimla and Sirmour districts, from June to October, and ascends to 6500' in Himalayas.

14. ***Terias laeta laeta*** (Boisduval)
(The Spotless Grass Yellow)

1836. *Terias laeta* Boisduval, *Spec. Gen. Lep.*, **1** : 674.

Material : 01, 13.X.1999

Locality : Suknada

Collector Name : I.J. Gupta & Party

Diagnostic Features : Head with the antennae, thorax and abdomen dusky black; underside of antennae with a line of white dots; thorax and abdomen whitish. Hindwings border broader anteriorly but rapidly narrowing posteriorly to a line. Both sexes with the wing tip much pointed, with the outer margin sharply cut and straight to hind angle; outer black border stopping abruptly at vein 2.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Solan districts during May and December.

15. ***Terias hecabe fimbriata*** (Wallace)
(The Common Grass Yellow)

1867. *Terias fimbriata* Wallace, *Trans. ent. Soc.Lond.*, **4**(3) : 323.

Material : 01, 19.V.1999

Locality : Meteta

Collector Name : T.R. Sharma & Party

Diagnostic Features : Head with the antennae yellowish, the club black; head, horax and abdomen yellowish, shaded with fuscous; underside yellowish white. Hindwings with a slightly curved subbasal series of three spots; Both wings with minute reddish brown costal and outer marginal terminal specks at vein ends.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Hamirpur, Kangra, Mandi, Shimla, Sirmour and Solan districts from August to October, and ascends to about 7000' in N.W. Himalayas.

16. *Colias electo fieldii* Menetries
(The Dark Clouded Yellow)

1855. *Colias fieldii* Menetries, *Enum. Corp. Anim. Mus. Petr.*, **1** : 79.

Material : 01, 01.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party

Diagnostic Features : Head with the antennae and thorax anteriorly salmon pink, the club darkening to brown; thorax and abdomen dusky greenish-black. Underside yellow. Hindwings deep orange; heavily dusted with black thin covering, at base and posterior part of wing; inner margin pale yellow; outer margin broadly black.

Distribution : From Himachal Pradesh, this has been recorded from Chamba, Kangra, Mandi, Shimla and Una districts, almost throughout the year.

III. Family DANAIDAE

17. *Danaus genutia* (Cramer)
(The Common Tiger)

1779. *Papilio genutia* Cramer, *Pap. Exot.*, **3** : 23.

Material : 01, 13.X.1999

Locality : Suknada

Collector Name : T.R. Sharma & Party

Diagnostic Features : Head with the antennae black. Head and thorax black, with white spots; abdomen tawny above, whitish beneath; smell pouch well developed on both sides of hindwing in male.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Solan districts during April to September.

18. ***Danaus chrysippus*** **(Linn.)**
(The Plain Tiger)

1758. *Papilio chrysippus* Linn. *Syst. Nat.*, 10thed : 471.

Material : 10, 13.X.1999, 9.X.1999, 2.X.2000, 18.X.1997

Locality : Dehra, Dehra Gopipur, Pong Dam

Collector Name : T.R. Sharma & Party, M.S. Verma, G.S. Arora & Party, I.J. Gupta & Party

Diagnostic Features : Head with the antennae black; head and thorax spotted with white; abdomen ochreous above, whitish beneath. Underside paler; forewing tip area and the hindwing reddish yellow.

Distribution : From Himachal Pradesh, the species has been recorded from Hamirpur, Kangra, Kullu, Mandi, Shimla, Sirmour and Solan districts, throughout the year in plains but between April and August in hilly area.

19. ***Euploea core core*** (Cramer)
(The Common Indian Crow)

1780. *Papilio core* Cramer, *Pap. Exot.*, **3** : 133.

Material : 02, 13.X.1999

Locality : Dehra

Collector Name : T.R. Sharma & Party

Diagnostic Features : Male and female : Upperside : Both wings dark brown, with a slightly middle of outer margin and marginal row of white spots, of which some of the anterior ones may be absent sometimes.

Distribution : In Himachal Pradesh, it has been recorded from Kangra, Mandi, Shimla, Sirmour and Solan districts between May and December.

IV. Family SATYRIDAE

20. ***Mycalesis perseus blasius*** (Fabricius)
(The Common Bushbrown)

1775. *Papilio perseus* Fabricius, ; *Syst. Ent.*: 488, no. 199.

Material : 02, 14.XII.1997

Locality : Samkad

Collector Name : I.J. Gupta & Party

Diagnostic Features : Antennae brown above, greyish-white beneath, head, thorax and abdomen brown above, paler beneath. Male and female Upperside Both wings pale to dark brown; slightly middle of outer margin and marginal lines closer to each other and paler. Forewings with a white-centered yellow-ringed black eye in area 2, rarely with a small spot in area 5.

Distribution : From Himachal Pradesh, it has been recorded from Chamba and Kangra during February to October.

21. ***Mycalesis mineus mineus*** (Linn.)
(The Dark-Banded Bushbrown)

1767. *Papilio mineus* Linnaeus, *Syst. Nat.*, 1(2) : 768.

Material : 04, 10.X.1999

Locality : Maha Bridge

Collector Name : R. Palliwal & Party

Diagnostic Features : Antennae brown, the club with black and reddish yellowmarks. Head, thorax and abdomen brown. Forewings with a white-centered yellow-ringed black eye in area 2 and a smaller eyes in area 5. Hindwings unmarked, generally with one or two obscure eyes.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu, Shimla and Sirmour districts during April to November

22. ***Lethe rohria rohria*** (Fabr.)
(The Common Tree Brown)

1787. *Papilio rohria* Fabricius, *Mant. Ins.*, 2 : 45.

Material : 01, 2.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party

Diagnostic Features : Head, thorax and abdomen brown. In male forewing with apical and costal white spots. In female, the white band of forewing continuous from costa to vein. 2. Underside hindwing with discal band.

Distribution : It has been recorded upto 9000 feet in the Himalayas.

23. ***Ypthima ceylonica hubneri*** Kirby
(The Common Fourring)

1871. *Ypthima hubneri* Kirby, *Syn. Cat. Diurn. Lep.*, : 95.

Material : 05, 13.X.1999

Locality : Dehra

Collector Name : T.R. Sharma & Party

Diagnostic Features : Head, thorax and abdomen dark brown. Upperside both wings blackish brown. Underside of bothiwings with distinct submarginal and marginal slender lines; a post discal whitish band, straight and narrow.

Distribution : It has been recorded upto 5000 feet in the Himalayas

24. *Melanitis leda ismene* (Cramer)
(The Common Evening Brown)

1775. *Papilio ismene* Cramer, *Pap. Exot.*, **1** : 60.

Material : 02, 12.X.1999

Locality : Suknada

Collector Name : M.S. Verma

Diagnostic Features : Antennae, head, thorax and abdomen in both forms brown to greyish-brown; antennae ringed with white, the tip ochreous. The species is one of the best examples showing seasonal changes in the shape of both wings, colour variations, particuarly on underside, and the markings, especially the eyes.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Shimla and Solan districts, between June and November.

V. Family NYMPHALIDAE

25. *Neptis mahendra* Moore
(The Himalayan Sailer)

1872. *Neptis mahendra* Moore, *Proc. zool. Soc. Lond.* **1872**(2) : 560.

Material : 02, 9.X.1999

Locality : Suknada

Collector Name : R. Palliwal & Party

Diagnostic Features : Male and female: Upperside dark brown to black; markings whitish. Forewing an elongated area with a single narrow line, with a large conical spot beyond it; series of white line near wing tip and large spots in upper margin; middle series of white spots from area 3 to inner area; a slightly middle of outer margin series of smaller white spots, dark in middle.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Kullu, Shimla, Sirmour and Solan districts from April to June.

26. ***Neptis hylas*** Linnaeus
(The Common Sailer)

1858. *Papilio hylas*, Linnaeus, *Syst. Nat.*, 10th ed. : 486.

Material : 02, 13.X.1999

Locality : Dehra

Collector Name : T.R. Sharma & Party

Diagnostic Features : Upperside black, with white markings; bands and spots broader in dry season form, and narrow bands and smaller spots in wet season form. Forewing an elongated area line narrow, with a large conical spot beyond; markings similar to those in *N. mahendra* except that the middle band in hindwings does not widen to upper margin.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Kinnaur, Kullu, Shimla, Sirmour and Solandistricts from March to October, and has been found to visit damp places.

27. ***Hypolimnas bolina*** (Linnaeua)
(The Great Eggfly)

1758. *Papilio bolina* Linn. *Syst. Nat.*, **10th ed.**: 479.

Material : 01, 18.XII.1997

Locality : Dehra Gopi pur

Collector Name : I.J. Gupta & Party

Diagnostic Features : Male Dark indigo blue or black. Forewings with an elongated bluish-white iridescent patch in wet season form, from upper discocellulars to vein 3, becoming large and broader in dry season form; two or three preapical bluish-white spots; a slightly middle of outer margin series of a few white dots, which may become completely dark. Female dark purplish-brown. Forewings with a row of slightly middle of outer margin dots.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Mandi, Shimla and Sirmour districts, upto September.

28. ***Hypolimnas misippus*** (Linn.)
(The Danaid Eggfly)

1764. *Papilio misippus* Linn., *Mus. Ulr.* : 264.

Material : 02, 02.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party

Diagnostic Features : Male Dark indigo blue to black, Both wings with the middle patch surrounded by iridescent purplish white or blue. Female Forewings brownish yellow, with black margin from base widening across tip of an elongated area and curving and terminating at posterior angle; the black upper half contains a few white dots near upper margin, an oblique band of white spots, from below upper margin to about area 3 and smaller white spots near wing tip.

Distribution : From Himachal Pradesh, it has been recorded from Kangra and Shimla districts only during August-October.

29. ***Junonia hierta*** **(Fabr.)**
(The Yellow Pansy)

1798. *Papilio hierta* Fabr., *Ent. Syst.* Suppl. : 424.

Material : 01, 6.X.1999

Locality : Thangar

Collector Name : R. Palliwal & Party.

Diagnostic Features : Male : Black. Forewings with a large medial reddish yellow patch extending from base to beyond discocellulars, then narrowed and bent downwards; preapical area with two pale-reddish yellow lines. Female : Forewings dark reddish yellow brown; medial patch pale reddish yellow, shortened basally and with black lines; black eyes present in area 2 and 5.

Distribution : From Himachal Pradesh, it has been recorded from Kangra, Kullu, Mandi, Shimla, Sirmour and Solan districts between March and October.

30. ***Junonia orithyia*** (Linn.)
(The Blue Pansy)

1764. *Papilio orithya* Linn., *Mus. Ulr.* : 278.

Material : 01, 9.X.1999

Locality : Suknada

Collector Name : R. Palliwal & Party.

Diagnostic Features : Male : Forewings with the basal two-thirds dark brown to blue-black; an oblique white post-middle band, followed by reddish yellow white pretip fasciae on pale-brown tip; two orange-ringed eyes in area 2 and 5. Female as the male but larger, with the eyes more prominent and with the basal half of hindwings being entirely black.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Hamirpur, Kangra, Kinnaur, Shimla, Sirmour and Solan districts during March to October.

31. ***Junonia lemonias*** (Linn.)
(The Lemon Pansy)

1758. *Papilio lemonias* Linn., *Syst. Nat.*, **10th ed** : 473.

Material : 08, 2.X.2000, 11.X.1997, 12.X.1999

Locality : Pong Dam, Dehra Gopi pur

Collector Name : G.S. Arora & Party, R. Paliwal & Party, M.S. Verma

Diagnostic Features : Male and Female Forewings pale brownishreddish yellow; an elongated area crossed by black line near base and pale reddish yellow bars and spots beyond middle and at end of an elongated area; Hindwings pale brownish-reddish yellow with two blue centered orange-ringed eyes.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Hamirpur, Kangra, Sirmour and Solan districts during April and October.

32. ***Junonia almana*** (Linn.)
(The Peacock Pansy)

1758. *Papilio almana* Linn., *Syst. Nat.*, **10th ed.** : 472.

Material : 01, 2.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party

Diagnostic Features : Male and female Forewings light brownish yellow; upper edge dark brown to black which is continued onto the outer margin; the latter normal in wet season forms but produced and angulated at vein 6 in dry season forms; Hindwings brownish yellow only in post-middle area, with a large bipupilled oval eye.

Distribution : From Himachal Pradesh, it has been recorded from Bilaspur, Kangra, Shimla, Sirmour and Solan districts between March and September.

33. ***Junonia atlites*** (Johnssen)
(The Grey Pansy)

1763. *Papilio atlites* Linn., *Cent. Ins.* : 24.

Material : 05, 9.X.1999

Locality : Suknada

Collector Name : R. Palliwal & Party

Diagnostic Features : Male Grey Forewings with two transverse waved lines across middle and two at end of an elongated area; waved fuscous lines beyond discocelluars; Hindwings grey; an elongated area with transverse black lines across middle and other lines and eyes as on forewing. Female larger and darker; eyes larger and more prominent on both sides; with marginal and slightly middle of outer margin lines more distinct.

Distribution : From Himacal Pradesh, it has been recorded from low elevations in Kangra, Sirmour and Solan districts, during October-November.

34. ***Junonia iphita*** (Cramer)

(The Chocolate Pansy)

1779. *Papilio iphita* Cramer, *Pap. Exot.,* **3** : Pl. ccix. figs. C, D.

Material : 01, 12.X.1999

Locality : Ghar Jarot

Collector Name : M.S. Verma

Diagnostic Features : Male and female Forewings pale to dark brown, with the paler half in the tip area and white spots near tip; dark-brown dark fasciae in middle and at end of an elongated area; dark bands beyond an elongated area; Hindwings pale to dark brown.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Mandi, Shimla, Sirmour and Solan districts fromMarch to October and ascends to about 9000'in Himalayas.

35. ***Cynthia cardui*** (Linn.)

(The Painted Lady)

1758. *Papilio cardui* Linn., *Syst. Nat.,* **10th ed.**: 475.

Material : 01, 5.X.1999

Locality : Balghar

Collector Name : M.S. Verma

Diagnostic Features : Male and female both wings purplish red at bases. Forewings dark brown, with pale-reddish yellow spots at subbasal area; an irregular angular band from middle of an elongated to hind angle; Hindwings dark brown, with the area from beyond disc to outer margin reddish yellow-brown; a row of larger five dark brown to black spots with slightly paler centre.

Distribution : In Himachal Pradesh, it has been recorded from Kangra, Kinnaur, Shimla, Solan and Una districts.

36. ***Symbrenthia hippoclus*** deNiceville
(The Common Jester)

1779. *Papilio hippoclus* Cramer, *Uitl. Kapellen*, 3(17-21) : 46, pl. 220, f. C, D.

Material : 01, 9.X.1999

Locality : Suknada

Collector Name : R. Palliwal & Party

37. ***Phalanta phalantha*** (Drury)
(The Common Leopard)

1770. *Papilio phalontha* Drury, *Ill. Ex. Ins.*, 1 : pl. xxi. fig, 1,2.

Material : 05, 11.X.1999,

Locality : Suknada, Balghar

Collector Name : M.S. Verma

Diagnostic Features : Male and female bright reddish yellow. Upperside : Forewing an elongated area with wavy black fasciae ; rows of black spots in inter-nervular spaces below and beyond an elongated area; Hindwings with rows of small black separated marks from upper margin; Underside similar to that of upperside but paler.

Distribution : From Himachal Pradesh it has been recorded from Bilaspur, Chamba, Kangra, Shimla, Sirmour, Solan and Una districts during June-July, upto an altitude of about 9000.

38. ***Ariadne merione*** (Cramer)
(The Common Castor)

1777. *Papilio merione* Cramer, *Pap. Exot.*, 2 : Pl cxiv.

Material : 03, 15.X.1999

Locality : Bhatoli

Collector Name : T.R. Sharma & Party

Diagnostic Features : Male and female : Upperside : Both wings yellowish tree like-brown; with paired, wavy lines across the wing from base to outer margin, those at the middle and slightly middle of outer margin areas with pale reddish yellow suffusion in between waved lines.

Distribution : From Himachal Pradesh, it has been recorded from lower elevations in Kangra, Shimla and Sirmour districts from July to August.

VI. Family LYCAENIDAE

39. ***Castalius rosimon*** (Fabr.)

(The Common Pierrot)

1775. *Papilio rosimon* Fabricius, *Syst. Ent.* : 523.

Material : 02, 9.X.1999

Locality : Suknada

Collector Name : R. Palliwal & Party

Diagnostic Features : Head thorax and abdomen black above, white beneath, the latter banded laterally; antennae with white rings. Male : Both wings white, with a greyish-blue base. Female larger ; both wings with the marginal border broader, markings prominent.

Distribution : From Himachal Pradesh it has been recorded from Shimla and Solan districts and ascends to about 7000' in Himalayas.

40. ***Freyeria putli*** (Kollar)

(The Grass Jewel)

1848. *Lycaena putli* Kollar, In Hugel's, *Kaschmir und das Reich der Siek,* **4(2)** : 422.

Material : 01, 11.X.1999

Locality : Balghar

Collector Name : M.S. Verma

Diagnostic Features : Head, thorax and abdomen dark brown above, paler beneath : antennae with white rings. Male : Both wings violet brown. Hindwings with indistinct marginal black spots, with some reddish yellow thin covering above. Female : Forewings upperside as in male; hindwings with the marginal spots often prominently bordered with reddish yellow or orange.

Distribution : Form Himachal Pradesh, it has been recorded from Kangra district only.

41. ***Pseudozizeeria maha*** (Kollar)

(The Pale Grass Blue)

1848. *Lycaena maha* Kollar, In Hugel's, *Kaschmir und das Reich der Siek,* 4(2) : 422.

Material : 01, 30.IX.2000

Locality : Sthana

Collector Name : G.S. Arora & Party

Diagnostic Features : Head, thorax and abdomen bluish above, paler beneath; antennae with white rings. Male : Upperside both wings pale greenish-blue; border narrow and fuscous.

Underside spots encircled with white. Female dark brown to fuscous above, with blue thin covering. Underside with the markings distinct.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra, Shimla, Sirmour and Solan districts.

42. ***Zizula hylax*** (Trimen)
(The Tiny Grass Blue)

1775. *Papilio hylax* Fabricius, *Syst. Ent.*: 526, no. 351.

Material : 01, 9.X.1999

Locality : Suknada

Collector Name : R. Palliwal & Party

Diagnostic Features : Wings above blue with dark borders, below light brown, underside of forewing with no spot at mid cell underside of hind wing with outer discal spot in 6 midway and in line with spots in 5 and 7.

Distribution : Throughout India.

43. ***Euchrysops cnejus*** (Fabr.)
(The Gram Blue)

1798. *Hesperia cnejus* Fabricius, *Ent.Syst.* Suppl. : 430.

Material : 01, 30.IX.2000

Locality : Sthana

Collector Name : G.S. Arora & Party

Diagnostic Features : Head with the antennae branded with white ; thorax bluish above; abdomen brownish, covered with delicate white hair. Underside whitish, covered with white, woolly delicate hairs. Male : Upperside both wings violet blue, with the basal and middle area overlaid with blue thin covering; Female brownish; borders brownish. Underside markings more distinct but otherwise as in male.

Distribution : From Himachal Pradesh it has been recorded from Chamba, Kangra, Shimla and Solan districts.

44. ***Euchrysops pandava*** (Horsfield)
(The Plains Cupid)

1829. *Lycaena pandava* Horsfield, *Cat. Lep. E.I.C.*, : 84.

Material : 06, 5.X.1999, 30.IX.2000, 2.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party, M.S. Verma

Diagnostic Features : Head with the antennae brownish, with white rings and the tip; throax and abdomen dark brownish above, greyish beneath. Male : Upperside : Both wings lavender-blue with the veins often darker. Female with the underside both wings yellowish-grey, irrorated with brown. Hindwings with the hind spots prominent as in male.

Distribution : From Himachal Pradesh it has been recorded up to 6500' in Himachal Pradesh and reported from Kangra and Shimla districts.

45. ***Catochrysops strabo*** (Fabr.)

(The Forget-Me-Not)

1793. *Hesperia strabo* Fabricius, *Ent. Syst.*, **3(1)** : 287.

Material : 03, 2.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party

Diagnostic Features : Head, thorax and abdomen violet blue above, paler beneath ; antennae with white rings. Male : Upperside : Both wings pale violet blue. Female : Upperside both wings with broader brown border; the blue being brighter than in male, irrorated with silver smooth over disc in forewing and basal area in hindwings.

Distribution : From Himachal Pradesh, it has been recorded from Kangra and Shimla districts.

46. ***Prosotas nora*** Felder

(The Common Lineblue)

1860. Lycaena nora elder, *Sitz. Ak. Wiss. Wien, Math. Nat. Cl.*, **11** : 458.

Material : 01, 11.X.1999

Locality : Maha Bridge

Collector Name : R. Palliwal & Party

Diagnostic Features : Wing dorsally deep blue with narrow border; hindwing tailed; undersaide of forewing with pair of lines in cell near base, underside of hind wing with black marginal spot in 2 conspicuosly larger than spot at tornus, below spaces between discal lines filled in as dark bands.

Distribution : Throughout India.

47. ***Narathura atrax*** (Hewitson)

1862. *Amblypodia atrax* Hewitson, *Spec. Cat. Lep. Lycaenidae Brit. Mus.*, : 13, pl. 7, f. 80, 82.

Material : 01, 13.X.1999

Locality : Dehra

Collector Name : T.R. Sharma & Party

Diagnostic Features : Male above brilliant violet blue, borders very narrow; female paler blue with broad borders; wing below dark brown, underside of forewing discal line continuous, forewing marking defined by silver lines, hindwing without lobe.

Distribution : Kumaon to Assam.

48. ***Spindasis vulcanus*** (Fabricius)
(The Common Silverline)

1775. *Papilio vulcanus* Fabricius, *Syst. Ent.*, : 519.

Material : 01, 9.X.1999

Locality : Suknada

Collector Name : R. Palliwal & Party

Diagnostic Features : Head, thorax and abdomen fuscous brown above, whitish beneath; antennae with white rings and the tip fuscous. Male and Female : Upperside : Both wings fuscous brown to dark brown, with fuscous bands, smoothed with brilliant deep blue in male. Hindwings dark fuscous brown, with a fulvous hind patch, marked with two black eyes, the inner bordering on a silver moon like.

Distribution : Form Himachal Pradesh, it has been recorded from Kangra, Shimla and Solan districts.

49. ***Rapala schistacea*** Moore
(The Slate Flash)

1879. *Deudorix schistacea* Moore, *Proc. zool. Soc. Lond.* : 140.

Material : 01, 2.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party

Diagnostic Features : Head, thorax and abdomen slaty blue above,paler beneath; antennae with white rings. Male : Upperside both wings dark slaty blue, shot with brilliant blue in lower middle area of forewings and middle area of hindwings. Female : Upperside both wings purplish blue; borders purplish brown.

Distribution : From Himachal Pradesh, it has been recorded from Shimla district only.

VII. Family HESPERIIDAE

50. ***Spialia galba*** (Fabr.)
(The Indian Skipper)

1793. *Hesperia galba,* Fabricuis, *Ent. Syst.,* **3** : 352.

Material : 02, 14.XII.1997, 9.X.1999

Locality : Samkad Pateki, Dehra

Collector Name : I.J. Gupta & Party, M.S. Verma

Diagnostic Features : Head, thorax and abdomen olive brown above, whitish beneath. Abdomen with white bands on each joint. Antennae dark above, paler beneath. Male and female upperside tree like brown, paler beneath. Forewings with a narrow black band before middle. Hindwings with a spot in middle of an elongated area; post-middle series of white spots, of which the upper ones are elongated and conjoined.

Distribution : From Himachal Pradesh, it has been recorded from Kangra and Solan districts only.

51. ***Suastus gremius*** (Fabr.)
(The Indian Palm Bob)

1793. *Hesperia gremius* Fabr., *Ent. Syst.*Suppl. : 433.

Material : 01, 11.X.1999

Locality : Maha Bridge

Collector Name : R. Palliwal & Party

Diagnostic Features : Head, thorax and abdomen greyish to dark brown above, paler beneath.Male and female Upperside dark brown. Forewings with semi-transparent an elongated area spots and a middle series of spots, of which the one on inner area is long and narrow.

Distribution : From Himachal Pradesh, it has been recorded from Chamba, Kangra and Shimla districts.

52. ***Pelopidas mathais*** (Fabr.)
(The Small Branded Swift)

1798. *Hesperia mathias* Fabricius, *Ent. Syst.* Suppl., : 433.

Material : 02, 2.X.2000

Locality : Pong Dam

Collector Name : G.S. Arora & Party

Diagnostic Features : Head, thorax and abdomen dark brown above, paler beneath. Antennae about half the length of upper margin, reaching an elongated area spots. Male and female : Upperside both wings dark brown. Forewing with two prominent elongated an elongated area spots ; male with a sex brand from vein 1 to vein 2 and without any spot in area 1b; female without brand and with a spot in 1b and a smaller above it.

Distribution : It has been recorded from Kangra and Solan districts in Himachal Pradesh.

REFERENCES

Mani, M.S. 1986. Butterflies of Himalaya. Oxford and IBH. Publishing company New Delhi 181pp.

Varshney, R.K. 1993-1997. Index *Rhopalocera Indica*. Part III. Genera of Butterflies from India and neighbouring countries. *Oriental Ins.*, **27**(1993) : 347-372; **28**(1994) : 151-198; 31(1997) : 83-137, Index-138 A-C.

Wynter-Blyth, M.A. 1957. Butterflies of the Indian Region. Bombay Natural History Society, Bombay, 523pp.

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, **12** : 43-63, 2009

INSECTA : ORTHOPTERA

KAMAL SAINI, H.S. MEHTA AND S.K. MONDAL*
Zoological Survey of India, High Altitude Zoology Field Station, Solan–173 212

INTRODUCTION

Order Orthoptera includes both long and short horned grasshoppers, crickets and grouse locusts. These insects are moderate in size, ranges in length from less than 5 mm to 115 mm. They are important groups of insects known as pest of agricultural crops, vegetables and forest. The Orthopterans are distributed throughout the physiographic zones of the world from sea level to high altitude in the Himalayan regions. The antennae are filiform but some times ensiform. Tarsi 2 to 4 segmented; hind femora enlarge for modifying for jumping. Wings fully developed or brachypterus or absent; fore wings generally in the form of leathery tegmina; hind wings membranous fan like; male external genitalia complex (except in teTrigidae), symmetrical and concealed when not in use. Female has external long or short ovipositor for depositing the eggs; Male of most species produce sound by different methods; female generally do not produced sound.

SYSTEMATIC ACCOUNT

Order ORTHOPTERA

Key to superfamilies

1. Antennae about as long or longer than the body, many segmented; tympanal organs, when present on fore tibiae 3

– Antennae shorter, with less than 30 segments; tympanum organs, when present, at base of abdomen 2

2. Pronotum extended backwards to cover abdomen; empodium absent; antennae longer than fore femur .... TETRIGOIDEA

---

*Zoological Survey of India, M-Block, New Alipore, Kolkata-700 053.

- Pronotum normal or, if rarely extended behind, then empodium present or antennae shorter than fore femur .... ACRIDOIDEA

3. Tarsi 4-segmented, at least on middle and hind legs .... TETTIGOINOIDEA

- Tarsi 3-segmented .... GRYLLOIDEA

Superfamily TETRIGOIDEA

Family TETRIGIDAE

Pronotum almost covers the whole abdomen and conceals the hind wings; tegmina reduced to small lateral scales, while the hind wings well developed; anterior and middle tarsi consist of 2 segments, while the posterior ones with three segments; claws of tarsi not provided with arolium or empodium. Phallic complex entirely different; epiphallus absent.

Subfamily TETRIGINAE

Posterior angles of lateral lobes of pronotum turned downwards, more or less rounded, first and third posterior tarsal segtments unequal in length, first rather longer than the third.

Key to genera

1. Body strongly granulose; vertex and eyes obviously raised above the level of pronotum; antennae inserted distinctly below the inferior margin of eyes; body strongly granulose .... ***Ergatettix*** Kirby

- Body generally smooth or a little granulose; vertex and eyes very little or not at all raised level of the pronotum; antennae inserted below the middle of eyes .... ***Hedotettix*** Bolivar

Genus *Ergatettix* Kirby, 1914

1. *Ergatettix dorsifera* (Walker)

1871. *Tettix dorsifera* Walker, *Cat. Derm. Salt. Brit. Mus.*, 5 suppl. : 825.

1929. *Ergatettix dorsifera* : Hebard : *Revue Suisse Zool.*, **36** : 588.

Material examined : 02 exs., Nagrota suria, 13.x.2000, T.R. Sharma and party; 23.vii.2002, coll. S.Thakur & party.

Diagnosis : Dark-brown patches behind the shoulders may or may not be developed, and these spots may or may not unite to form a band; undulations in median carina of pronotum and nodosities on external surface of behind hind femora also vary from less to heavy.

Distribution : India : Himachal Pradesh, Arunachal Pradesh, Assam, Bihar, Delhi, Karnataka, Kerala, Madhya Pradesh, Maharastra, Manipur, Meghalaya, Orissa, Sikkim, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Central Asia, South Chaina, Greater Sudan Islands, Java, Myanmar, Nepal, Sumatra, Sumba, Taiwan and Turkmenia.

Genus *Hedotettix* Bolivar, 1887

Key to species

1. Pronotal costa widely sulcate, the rami more or less abruptly widened between antennae, median carina of pronotum more or less compressed-arcuate before the shoulder, highest at the sulci; dorsum convex. .... *gracilis* (De Haan)

– Frontal costa not widely sulcate, rami not widened between the antennae; median carina of pronotum a little compressed, low arcuate forward .... *attenuatus* Hancock

2. ***Heddotettix gracilis*** (De Haan)

1842. *Acridium (Tetrix) gracile* De Haan, *Temminck Verhandel, Orthoptera* : 167, 169.

1914. *Hedotettix gracilis* : Kirby, *Fauna Brit. India, Orthoptera* : 72.

Material examined : 11exs., Nagrotasuria, 7.x.1999, coll. R.P. Paliwal & party; Dehra Gopipur, 17.x.2000, coll. T.R. Sharma & part; 23.xii.2001, Water Sport Complex Pond Dam; H.S. Mehta & party; Water Sport Complex, 23.vii.2002, coll. S. Thakur & party.

Diagnosis : Micro and macropterus forms are found in both the sexes; colour of the dorsum varies from brown to brownish yellow or olive green; dorsum of pronotum smooth or finely granulose, median carina percurrent, a little compresso elevated and straight.

Distribution : India (Throughout).

Elsewhere : Celebes; Java; Myanmar; Sumatra; Sri Lanka; Taiwan: Thailand and Vietnam.

3. ***Hedotettix attenuates*** Hancock

1904. *Hedotettix attenuatus* Hancock, *Spolia zeylan.*, 108.

Material examined : 03exs., Ghar Jarori Near Jawali, 24.vi.1998, coll. D.P. Uniyal & party; Nagrota Suria, 30.ix.2000, Coll. H.S. Mehta & party; Dehra Gopipur, 23.vii.2002, coll. S. Thakur & party.

Diagnosis : This species is similar to the preceding species, except in the frontal costa which is narrowly sulcate and less strongly arcuate.

Distribution : India : Himachal Pradesh, Arunachal Pradesh, Assam, Manipur, Meghalaya, Orissa and Tripura.

Elsewhere : Sri Lanka.

Superfamily ACRIDOIDEA

Key to Family

1. Foveolae of the vertex contiguous, superior and forming the extremity of the fastigium; stridulatory mechanism absent .... PYRGOMORPHIDAE

– Foveolae of the vertex lateral or inferior; never forming the tip of the fastigium; stridulatory mechanism present .... ACRIDIDAE

Family ACRIDIDAE

Key to the subfamily

1. Prosternal process or tubercle absent 2

– Prosternal process or tubercle present 4

2. Stridulatory file absent in posterior femora 3

– Stridulatory file present in posterior femora .... GOMPHOCERINAE

3. Head more or less acute in profile, and with more acute angle of frons, tegmina without intercalary vein (if present, weak irregular and not serrated even in male) .... ACRIDINAE

– Head rounded in profile; face almost vertical, rarely oblique; tegmina always with intercalary vein in median area .... OEDIPODINAE

4. Radial area of tegmen with series of regular, parallel stridulatory Veinlets .... HEMIACRIDINAE

– Stridulatory veinlets of radial of tegmen absent 5

5. Lower external lobe of hind knee with spine like apex .... OXYINAE

– Lower external lobe of hind knee with rounded, angular or subacute but not spine like apex 6

7. Last abdominal tergite in male (in most of the genera) well developed furcula; supra anal plate mostly with an attenuate or trilobate apex .... COPTACRIDINAE

– Last abdominal tergite without well developed furcula; supraanal plate variable .... CYRTACANTHACRIDINAE

Subfamily ACRIDINAE

Key to the genera

1. Head conically ascending; fastigium of vertex broad and laminate; Lateral carinae of pronotum divergent posteriorly .... *Acrida* Linnaeus

– Head not ascending; fastigium of vertex not so broad and laminate; lateral carinae of pronotum straight .... ***Phlaeoba*** Stal

Genus ***Acrida*** Linnaeus, 1758

4. ***Acrida exaltata*** (Walker)

1859. *Truxalis exaltata* Walker, *Ann. Mag. nat. Hist.*, (3)**4** : 222.

1954. *Acrida exalta* : Dirsh, *Bull. Soc. Fouad Ent.*, **38** : 149.

Material examined : 12 exs., Nagrota, 23.xi.2001, coll. H.S. Mehta and party; Dehra Gopipur, 28.xii.2002, coll. S. Thakur & party; Dehragopipur, 30.vii.2002, coll. S. Thakur & party.

Diagnosis : Size medium large size; head conically ascending, basal part narrow, fastigium of vertex of vertex broad, laminate and truncate; transverse sulcus of pronotum placed about the middle of disc; hind femora without any peg-like structure on internal surface.

Distribution : India (Widely distributed).

Elsewhere : Afghanistan; Aden; Arabia; Bangladesh; S.E. Iran; Nepal; Pakistan; Sri Lanka; S.E. Tibet and Yemen.

Genus ***Phlaeoba*** Stal, 1860

5. ***Phlaeoba infumata*** Brunner

1893. *Phlaeoba infumata* Brunner, *Annali Mus. civ. Stor. Nat. Giacomo Doria*, **33** : 124.

1914. *Phlaeoba infumata* : Kirby, *Fauna Brit. India, Orthopt.*, : 103.

Material examined : 2 exs., Dehra Gopipur, 13.x.2003, coll. T.R. Sharma & party; Dhameta, 30.vii.2002, coll. S. Thakur & party.

Diagnosis : Size medium; brownish testaceous in colour; antennae ensiform; tegmina and wings longer than abdomen; wings fusco-hyaline, infuscated towards extremity and subgenital plate of male acute at apex.

Distribution : India (Widely distributed).

Elsewhere : S. China; Malacca; Myanmar; E. Nepal.

Subfamily OEDIPODINAE

Key to genera

1. Median carina of pronotum entire or a little interrupted by the transverse groove foveole trapezoid .... ***Aiolopus*** Fieber

– Median carina of pronotum very distinctly interrupted by transverse groove 2

2. Median carina of pronotum cut by one groove 3
– Median carina of pronotum cut by 2 to 3 transverse grooves 8
3. Thorax rather short 4
– Thorax long 5
4. Wings without well marked fascia 7
– Wings with well marked fascia .... ***Oedaleus*** Fieber
5. Pronotum with strong crest or acutely tectiform and not constricted in prozona .... ***Gastrimargus*** (Saussure)
– Pronotum without very distinct crest, constricted in prozona; posterior margin obtusely angular .... ***Sphingonotus*** Saussure
6. Internal calcaria of posterior tibiae greatly unequal, lower one much longer than the other, abruptly hooked at apex, very acute .... ***Heteropternis*** Stal
– Internal calcaria of posterior tibiae not greately unequal, normal 8
7. Wings hyaline yellow at base, with a curved band beyond the middle .... ***Dittopternis*** Stol
– Wings generally subhyaline, without curved band beyond the middle ... ***Pusana*** Fieber
8. Pronotum with well marked crest, angulated behind; median carina of pronotum distinctly interrupted in the prozona by 2 transverse grooves and seems to be bidantate; occiput with a pair of tubercles between the eyes .... ***Trilophidia*** Stall
– Pronotum without very crest; median carina of pronotum indistinctly interrupted by transverse grooves and not bidantate in prozona; occiput without a pair of tubercles between the eyes .... ***Acrotylus*** Fieber

Genus *Aiolopus* Fieber, 1853

6. *Aiolopus thalassinus tamulus* (Fabricius)

1798. *Gryllus tamulus* Fabricius, *Ent. Syst., Suppl.,* : 195.

1968. *Aiolopus thalassinus tamulus* : *Hollis, Bull. Brit. Mus. nat. Hist.* (Ent.), 22(7) : 347.

Material examined : 01 ex., Nagrota Suria, 12.x.2000, coll. T.R. Sharma.

Diagnosis : Size medium; fastigium with front angle more acute; foveolae narrowly trapezoid, about as long as wide; pronotum somewhat saddle-shaped, posterior margin rounded; posterior margin rounded; posterior tibiae usually with red colouration in apical fourth and broadly separated from black band by a wide bluish grey band.

Distribution : India : Himachal Pradesh, Andaman & Nicobar Islands, Bihar, Delhi, Karnataka, Madhya Pradesh, Rajasthan, Tamil Nadu, Uttar Prades, West Bengal.

Elsewhere : Australia; Bangladesh; Borneo; Celebes; Chaina; Hainan; Hong Kong; Japan; Java; Lombok; Malaya; Myanmar; New Guines; Papua; Philippines; Singapore; Sri Lanka; Sumatra; Taiwan; Thailand and Timor.

Genus *Heteropternis* Stal, 1873

7. ***Heteropternis respondens*** (Walker)

1859. *Acrydium respondens* Walker, Ann. Mag. nat. Hist. 4(3) : 223.

1914. *Heteropternis respondens* : Kirby, *Faun. Mag. Brit. India, Orthoptera* : 128.

Material examined : 01ex., Nagrota Suria 12.x.2000, S. Thakur & party.

Diagnosis : Body medium in size; Head smooth or a little granulated; principal sulcus placed some what before the middle; tibiae with unequal internal spines, wings yellow at base and darker towards out side.

Distribution : India : Himachal Pradesh, Arunachal Pradesh, Bihar, Orissa, Tamil Nadu and Uttar Pradesh.

Eleswhere : China; Java; Myanmar; Malakka; South East Asia; Sri Lanka and Sumatra.

Genus *Oedaleus* Fieber, 1853

8. ***Oedaleus abruptus*** (Thunberg)

1815. *Gryllus abruptus* Thunberg, *Mem. Acad. Sci, St.-Petersb.*, **5** : 233.

1981. *Oedaleus abruptus* : Ritchie, *Bull. Brit. Mus. nat. Hist. (Ent)*, **42**(3) : 104-107.

Material examined : 03 ex., Dhameta Pong Dam 30.ix..2000, coll. H.S. Mehta & party; Nagrota Suria, 28.vii.2002, coll. S. Thakur & party.

Diagnosis : Size medium; pronotum low tectiform, median carina low acute, not interrupted by posterior sulcus; hind margin obtusely angular; pronotal x marking always with anterior and posterior arms separatehind tibiae with straw or red coloured with dark basal ring and thicker sub-basal pale ring.

Distribution : India : Himachal Pradesh, Andhra Pradesh, Bihar, Goa, Jammu & Kashmir, Goa, Karnataka, Kerala, Madhaya Pradesh, Meghalaya, Orissa, Rajasthan; Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Afghanisthan; Bangladesh; China; Indo-Chaina; Myanmar; Nepal Pakistan; Sri Lanka and Thailand.

Genus ***Sphingonotus*** Feiber, 1852

9. ***Sphingonotus longipennis*** Saussure

1884. *Sphingonotus longipennis* Saussure, *Mem. Sox. Phyes. Hist. nat. Geneva*, **28**(9) : 197, 203.

Material examined : 02ex., Nagrota Suria, 31.vii.2002, coll. H. S. Mehta & party; Down Stream River Beas Dehra 23.xii.2002, coll. S. Thakur.

Diagnosis : Body medium size; wings bluish in the middle, followed by a broad black band, curving from the middle of the costa to above the anal angle; hind femora blue; tibiae alternately banded with blue black.

Distribution : India (Himachal Pradesh, Arunachal Pradesh, Assam, Jammu & Kashmir, Punjab and West Bengal).

Genus ***Gastrimargus*** Saussure, 1884

10. ***Gastrimargus africanus africanus*** (Saussure)

1888. *Oedaleus (Gastrimargus) marmoratus var. Africana* Saussure, *Mem. Soc. Phys. Hist. nat. Geneve*, **30**(1.) : 39.

1982. *Gastrimargus africanus africanus* : Ritchie, *Bull. Brit. Mus. nat. Hist. (Ent.)*, **44**(4) : 248.

Material examined : 09 ex. Bhotali, 17.x.2000, coll. T.R. Sharma & party; Nagrota Suria, 31.vii.2002, coll. S. Thakur & party.

Diagnosis : Body large size; antennae as long as head and pronotum together or slightly larger; pronotum tectiform with high sharp median carina; metazoan of pronotum with X-marking usually effaced and without pale striae; wings with dark brown or black fasciae hind femora brown or blackish.

Distribution : India : Himachal Pradesh,, Andhra Pradesh, Bihar, Delhi, Goa, Karnataka, Orissa, Sikkim, Uttar Pradesh, West Bengal.

Elsewhere : Nepal; Saudi Arabia; Sri Lanka; Thailand; Tibet and Yemen A.R.

Genus ***Pusana*** (Uvarov)

11. ***Pusana laevis*** (Uvarov)

1921. *Pusana laevis* Uvarov, *Ann. Mag. nat. Hist.*, **9**(7) : 491.

Material examined : 01 ex., Dehra Gopipur, 13.x.1999, coll. T.R. Sharma & party.

Diagnosis : Size medium; face and body covered with sparse hairs; antennae longer than the head and pronotum together; face smooth; frontal ridge sulcate and parallel between fastigium and ocellus; pronotum feebly constricted anteriorly, metazoan almost flat, scarcely raised above the prozona; tegmina extending beyond the hind knees; wings hyaline, veins bluish except the apical part where they are brown; hind tibiae bluish.

Distribution : India : Himachal Pradesh, Bihar; Sikkim.

Elsewhere : Bangladesh.

Genus *Trilophidia* Stal, 1873

12. *Trilophidia annulata* (Thunber)

1815. *Gryllus annulatus* Thunberg, *Mem. Acad. Sci. St.-Petersb.*, 5 : 234.

1965. *Trilophidia annulata* : Hollis, *Trans. R. ent. Soc. London*, 117(8) : 251.

Material examined : 07 exs., Nagrota Suria, 07.x.1999, coll. R. Paliwal & party; Guglaria near Jawali, 27.vii.2002, coll. S. Thakur and party; Guglaria near Jawali, 29.vii.2002, coll. S. Thakur and party.

Diagnosis : Size medium; body brown to grey with black markings, pubescent beneath; pronotum rugose with a high median carina, forming two teeth in front, and with lateral carina; wings yellow at base and brown or black beyond; hind tibiae brown with a pale band towards the base and with a little pale band beyond the middle.

Distribution : India : Himachal Pradésh, Andhra Pradesh, Bihar, Goa, Karnataka; Madhya Pradesh, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh; Borneo; South Chaina; Japan; Java; Korea; Malayasia; Mongolia; Myanmar; Nepal; Pakistan; Philippines Sarawak; Singapore; Sri Lanka; Sumatra; Taiwan; Thailand; Vietnam.

Genus *Acrotylus* Fieber, 1853

13. *Acrotylus humbertianus* Saussure

1884. *Acrotylus humbertianus* Saussure, *Mem. Soc. Phys. Hist. nat. Geneve*, 28(9) : 189.

Material examined : 01 ex, PWD Rest House House Jawali Pong Dam, 21.vi.1998, T.R. Sharma and party.

Diagnosis : Body medium in size; antennae longer than head and pronotum together; tip of vertex conical, concave, with a carina on each side; prozona with fuscus fascia, lateral margin white below; tegmina with two oblique white spots or fascia; wings hyaline, yellow at base; radial area with a semilumnar fusous fascia.

Distribution : India : Himachal Pradesh, Andhra Pradesh, Assam, Delhi, Goa, Madhya Pradesh, Maharastra, Rajasthan, Tamil Nadu and West Bengal.

Elsewhere : Afghanistan; Bangladesh; Nepal; Pakistan; Sri Lanka.

Subfamily HEMIACRIDINAE

Genus *Spathosternum* Krauss, 1877

14. *Spathosternum pr. prasiniferum* (Walker)

1871. *Heteracris (?) prasinifera* Walker, *Cat. Derm. Salt. Brit. Mus.*, 5 Suppl. : 65.

1936. *Spathosternium prasiniferum prasiniferum* : Tinkham, *Lingman. Sci. Journ. Canton*, 15 : 51.

Material examined : 1M, 3F, Sathabhumi, 25.x.2006, coll. Rajmohana & party (Regd. No. 13.452); 2M, 1F, Gangadikal shola, 23.x.2005, coll. Rajmohana & party (Regd. No. 13.502).

Diagnosis : Body small in size; head considerably shorter than pronotum; antennae short, not reaching the posterior margin of pronotum; hind femora with a rounded genicular lobe; broad black or dark green stripe running behind the lower part of the eyes and below the lateral carinae of pronotum.

Distribution : India (Throughout India).

Elsewhere : Myanmar; S.E. China; Thailand and Vietnam.

Subfamily OXYINAE

Genus *Oxya* Serville, 1831

Key to the species (Male)

1. Cercus laterally compressed, hardly narrowing towards apex, weakly Bifurcate at apex .... *fuscovittata* (Marschall)

- Cercus conical, narrowing towards apex and obtuse and truncate towards apex .... *hyla hyla* Serville

Key to species (female)

1. Ventral surface of subgenital plate almost completely flat or weakly concave appearing widely posteriorly ....*fuscovittata* (Marschall)

- Ventral surface of subgenital plate flat or concave only in median posterior half, not widening posteriorly .... *hyla hyla* Serville

15. *Oxya hyla hyla* Serville

1831. *Oxya hyla* Serville, *Ann. Sci. nat. (Zool),* **22** : 287.

Material examined : 07 exs., Bhotali, 12.x.2002, coll. T.R. Sharma & party; Pong Dam, 29.vii.2002, coll. S. Thakur & party; Jowali Pong Dam, 29.vii.2002, coll. S. Thakur & party.

Diagnosis: Body small and finely rugose, shiney; in male supraanal plate with small tubercle; circus with subacute apex; in female subgenital plate with two longitudinal ridges extending forwards from posterior margin.

Distribution : India : Himachal Pradesh, Arunachal Pradesh, Andhra Pradesh, Assam, Bihar, Goa, Himachal Pradesh, Karnataka; Madhya Pradesh, Meghalaya, Orissa, Rajasthan, Tamil Nadu Tripura, Uttar Pradesh and West Bengal.

16. ***Oxya fuscovitta*** (Marschall)

1836. *Gryllus fuscovittatus* Marschall, *Ann. Wien. Mus. Viena,* **1**(2) : 211.

1971. *Oxya fuscovittata* : Marschall, *Bull. Br. Mus. nat. Hist. (Ent.),* **26**(7) : 289.

Material examined : 03 exs., Ramsar Island, 24.xii.2001, coll. H.S. Mehta & party. Pong Dam, 27.vii.2002, coll. S. Thakur & party.

Diagnosis : Size medium; integument finely pitted and shiney; circus of male compressed and weakly bifurcate at apex; ventral surface of subgenital plate of fenale almost completely flat or weakly xoncave.

Distribution : India : Himachal Pradesh, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Goa, Jammu & Kashmir, Madhya Pradesh, Maharastra, Meghalaya, Orissa, Rajasthan, Uttar Pradesh, West Bengal.

Elsewhere : Afghanistan; Bangladesh; Pakistan; and U.S.S.R (South West).

Subfamily GOMPHOCERINAE

Genus ***Dnopherula*** Karsch, 1896

Subgenus ***Aulacobothrus*** Bolivar, 1902

17. ***Dnopherula (Aulacobothrus) socius*** (I. Bolivar)

1902. *Aulacoboth socius* Bolivar, *Annls. Soc. ent. France,* **70** : 599.

1971. *Dnopherula (Aulacobothrus) socius* : Jago, *Proc, Acad. nat. sci., Philadelphia,* **123**(8) : 243.

Material examined : 02 exs, Down Stream River Beas Dehra, 31.vii.2002, coll. S. Thakur & party.

Diagnosis : Body medium size; hind femora with 3 oblique dark brown bands and the knee dark brown; lateral carina of pronotum weavy, median carina straight; hind tibiae red.

Distribution : India : Himachal Pradesh, Andhra Pradesh, Hariyana, Maharastra, Tamil Nadu.

18. ***Dnopherula (Aulacobothrus)*** sp.

Material : 01, 17.X.2000 Bhotali Nagrota Suria

Diagnostic Features : Antennae filiform with segments compressed in basal half, Pronotum flattened, angulated behind, termina completely developed. Hind femora above distinctly spotted with the outer area slightly convex. Cerci short and conical.

Subfamily COPTACRIDINAE

Genus ***Eucoptacra*** Bolivar, 1902

19. ***Eucoptacra saturata*** (Walker)

1870. *Acridium saturatum* Walker, *Cat. Derm. Salt. Br. Mus. Pt. III Locustidae* : 628

1921. *Eucoptacra saturate* : Uvarov, *Ann. Mag. nat. Hist.*, (9)7 : 503.

Material examined : 02 exs., Guglara near Jawali, 8.ix.1999, coll. D.P. Uniyal & party; Haripur Kangra, 27.vii.2002, coll. S. Thakur & party.

Diagnosis : Size medium; body rusty red brown; head short, smooth; tip of vertex flat, punctured; prosternal tubercle, stout, a little acute; hind femur black beneathhind tibia red, as long as the hind femora; tegmina a little shorter than the body, with numerous small marks; wings hyaline.

Distribution : India : Himachal Pradesh, Assam, Madhya Pradesh, Manipur, Meghalaya, Orissa, Sikkim, Tripura,Uttar Pradesh and West Bengal.

Subfamily CYRTACANTHACRIDINAE

Genus *Pachyacris* Uvarov, 1923

20. *Pacyacris vinosa* (Walker)

1870. *Acridium vinosum* Walker, *Cat. Derm. Salt. Brit. Mus.*, **3** : 588.

1922. *Pachyacris vinosa* : Uvarov, *Ann. Mag. nat. Hist.*, (9)**11** : 478.

Material examined : 04 exs., Guglara near Jawali, 19.x.2000, coll. T.R. Sharma & party; Nagrota Suria, 23.xii.2001, coll. H.S. Mehta and party.

Diagnosis : Large in size; fastigium of vertex almost flat; tegmina surpassing the tip of hind femora by a distance distinctly less than the length of pronotum, with oblique venation in apical part and transverse veins situated obliquely to principle vein; wings infumate, rosy at base; male circus elongate conical with acuminate apex.

Distribution : India : Himachal Pradesh, Assam, Bihar, Goa, Manipur, Meghalaya, Mizoram, Orissa, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : China; Mayanmar; Nepal; Thailand; Tonking.

Family PYRGOMORPHIDAE

Key to genera

1. Anterior margin of pronotum strongly reflexed nor dialated; Body short and stout; pronotum heavily rugosed and much widened Behind; posterior femora stout .... ***Chrotogonus*** Serville

– Anterior margin of pronotum neither reflxed nor dialated; body moderately slender; pronotum may or may not rugose and not much widened behind; posterior femora not so stout 2

2. Body medium and slender; antennae remote from the eyes, placed in front of the ocelli .... ***Atractomorpha*** Saussure

– Body medium to large; antennae placed near the eyes and inserted below the ocelli 3

3. Body large; outer apical spine of posterior tibiae absent 4

Body medium; outer apical spine of posterior tibiae absent .... ***Pyrgomorpha*** Serville

4. Fastigium of vertex less extended in front of the eyes; pronotum strongly tuberculated or rugosed .... ***Aularches*** Stal

– Fastigium of vertex a little more extended in frint of the eyes; pronotum neither tuberculated nor rugosed .... ***Poekilocerus*** Serville

Genus *Chrotogonus* Serville

21. *Chrotogonus tr. trachypterus* (Blanchard)

1836. *Ommexecha trachypterum* Blanchard, *Annls. Soc. ent. France*, **5** : 618.

1959. *Chrotogonus (Chr.) trachypterus trachypterus* : Kevan, *Publocoes cult. Co. Diam, Angola*, no. **43** : 147.

Material examined : 08exs., Nagrota Suria, 01.vi.1999, coll. T.R. Sharma & party; 19.x.2000 and 29.vii.2002, coll. S. Thakur & party.

Diagnosis : Body small in size; hind wings hyaline or occasionally faintly tinged yellowish brown and extend nearly two-thirds as long as temina.

Distribution : India : Himachal Pradesh, Andhra Pradesh, Bihar, Goa, Karnataka, Kerala, South east of Maharastra, South of Madhaya Pradesh; Orissa; Tamil Nadu; Uttar Pradesh and West Bengal.

Elsewhere : Sri Lanaka.

Genus *Atractomorpha* Saussure, 1861

22. *Atractomorpha crenulata* (Fabricius)

1793. *Truxalis cre*nulata Fabricius, *Ent. Syst.*, **2** : 28.

1969. *Atractomorpha crenulata* : Kevan and Chen, *Zool. J. Linn. Soc.*, **48** : 187.

Material examined : 13 exs., Nagrota Suria, 24.vi.1998, coll. D.P. Uniyal & party; Dehra Gopipur, 10.x.1999, coll. T.R. Sharma & party; Dhameta, 17.xii.2000, H.S. Mehta & party.

Diagnosis : Green or pale in colour; body medium and slender; fastigium of vertex short; eyes convex and prominent; lateral pronotal lobes with distinct membranous area, specially in females; hind femora not clearly convex; tegmina pointed, extending for one fourth of their length beyond the hind femora; hind wings normally tyrian pink to light mallow purple at base.

Distribution : India (Throughout).

Elsewhere : Bangladesh; Malaya: Myanmar; Pakistan; Sri Lanka; N. Sumatra; Thailand and S. Vietnam.

Genus *Aularches* Stal, 1873

23. ***Aularches miliaris*** (Linnaeus)

1758. *Gryllus (Locusta) miliaris* : Linnaeus, Syst. Nat., (10th ed.) **1** : 432.

1914. *Aularches miliaris* : Kirby, *Faun. Brit. India, Orth. (Acrididae)* : 168.

Material examined : 03 exs., Bhotali, 24.vi.1998, coll. D.P. Uniyal & party; Nagrota Suria, 17.x.2000, coll. T.R. Sharma & party; Dhameta Pong Dam, 27.vii.2002, coll. S. Thakur & party.

Diagnosis : Large size; body stout; head large, smooth, pale or black; pronotum strongly tuberculate above, with two large contiguous humps in front, cut by all the three sulci, front hump black or yellow, the hinder area rugose and deeply pitted at the sides; tegmina light brown, thickly reticulated with yellow nervures; abdomen black with narrow yellow incisions.

Distribution : India : Himachal Pradesh, Manipur, Jammu & Kashmir, Meghalaya, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere ; Java; Nepal and Sri Lanka.

Genus ***Poekilocerus*** Serville, 1831

24. ***Poekilocerus pictus*** (Fabricius)

1775. *Gryllus pictus* Fabricius, *Sys. Ent.*, 289.

1914. *Poekilocerus pictus* : Kirby, *Fauna Brit. India, Orthoptera,* : 172.

Material examined : 02 exs., Nagrota Suria, 28.vii.2002, coll. S. Thakur & party.

Diagnosis : Large size; head and pronotum with faint median carina; antennae blue black with yellow beyond the basal third of their length: beauty colour specimens.

Distribution : India : Himachal Pradesh, Andhra Pradesh, Bihar, Delhi, Gujrat, Haryana, Jammu and Kashmir, Madhaya Prades, Maharastra, Orissa, Rajasthan, Uttar Pradesh and West Bengal.

Elsewhere : Pakistan

25. ***Pyrgomorpha*** Sp.

Material examined : 01 ex., Bhotali near Haripur, Kangra, 12.x.2002, coll. T.R. Sharma & party.

Diagnosis : Body generally cylinder.

Distribution : Genus *Pyrgomorpha* is Peninsular Indian origin.

Superfamily GRYLLOIDEA

Key to the family

1. Anterior legs short, strongly fossorial with tibiae expanded and digitate for digging ... . GRYLLOTALPADAE

– Anterior legs normal tibiae simple 2

2. Posterior tibiae without denticles between the spines .... GRYLLIDAE

Family GRYLLOTALPIDAE

Genus *Gryllotalpa* Latreille, 1802

26. ***Gryllotalpa africana*** Beauvois

1805. *Gryllotalpa africana* Beauvois, *Ins. Afr. Amer.*, : 229.

Material examined : 01 ex., Down Stream river Beas Dehra, 31.vii.2002, S. Thakur & party.

Diagnosis : Body medium size; colorur rufous brown; elytral veins, in case of female, somewhat diverging and simply curved at base, some what converging towards apex; discoidal cell of elytra, in case of male, narrow, twice as long as base, a second cell between the diagonal vein and the first chord almost as large as the discoidal, anterior tibiae armed with four dactylus.

Distribution : India : Himachal Pradesh, Andaman Islands, Arunachal Pradesh, Assam, Bihar, Jammu and Kashmir, Karnataka, Kerala, Meghalaya, Orissa, Pondichery, Tamil Nadu, Uttar Pradesh, Tripura and West Bengal.

Elsewhere : Bhutan, Myanmar; Iran; Madagascar; Malaya; S. Spain; Singapore and Sri Lanka.

Family GRYLLIDAE

Key to the subfamilies

1. Spines of posterior tibiae immovable, without pubescent .... GRYLLINAE

– Spines of posterior tibiae movable, pubescent .... NEMOBINAE

Subfamily GRYLLINAE

Key to the genera

1. Face of the male strongly flattened and fore head more or less strongly prolonged; frontal rostrum of male projecting but simply angular .... ***Loxoblemmus*** Saussure

– Face of the male not flattened, fore head with wide frontal rostrum; frontal rostrum not projecting angularly 2

2. Head with a transverse yellow band between the ocelli; epiphallus deeply emarginated posteriorly forming H-shaped structure .... ***Modicogryllus*** Chopard

– Head without a transverse yellow band between tbe ocelli, epiphallus of different structure 3

3. Anterior projections of the ectoparamere approximate .... ***Gryllus*** Linnaeus

– Internal anterior projection of the ectoparamere much longer than the external anterior projection .... 4.

Posterior femora short and thick; mesal lobes with their apices between the bases of the ectoparameres; endoparameres J-shaped .... ***Plebiogryllus*** Chopard

Posterior femora normal; mesal lobes with their apices between apices of the ectoparameres, endoparameres C-shaped .... ***Teleogryllus*** Chopai

Genus ***Gryllus*** Linnaeus, 1758

27 ***Gryllus bimaculatus*** De Geer

1905. *Gryllotalpa africana* Beauvois. *Ins. Amer.*, : 229.

Material examined : 06ex., Nagrota Suria, 9.x.1999, coll. R. Paliwal & party; Bhotali Haripur Kangra, 12.x.2000, coll. T.R. Sharma & party; Dehra Gopipur, 23.vii.2002, S. Thakur.

Diagnosis : Body large size; legs almost glabrous; body typically black with a yellow spot at base of each tegmen.

Distribution : India : Himachal Pradesh, Andaman Islands, Arunachal Pradesh, Assam, Bihar, Jammu and Kashmir, Karnataka, Kerala, Meghalaya, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Africa; Australia; Bhutan; Iran; Madagascar; Malaya; Myanmar; Nepal; Pakistan; Singapore; S. Spain; and Sri Lanka.

Genus ***Loxoblemmus*** Saussure, 1877

28. ***Loxoblemmus detectus*** (Serville)

1839. *Platyblemmus dectectus* Serville, *Hist. nat. ins. Orth.* : 356.

1967. *Loxoblemmus detectus* : Bhowmik, *Zool. Anz.*, **182** (part ½) : 149.

Material examined : 02, ex., Guglara, 8.ix.1999, coll. D.P. Uniyal & party.; Dehra Gopipur, 12.x.2000, coll. T.R. Sharma & party.

Diagnosis : Body medium size (15 to 17 mm); head brown; occiput adomed with 4 yellow lines; first joint of antennae without any process; elytra extending up to the end of abdomen; mirror may or may not be divided, 2 oblique veins; wings short and caudale.

Distribution : India : Himachal Pradesh, Andaman Islands, Arunachal Pradesh, Andhra Pradesh, Bihar, Sikkim, Uttar Pradesh and West Bengal.

Elsewhere : Chaina; Java; Johore; Kuala; Lumpur; Pahang; Singapore; Sri Lanka; Sumatra; Taiwan.

Genus *Teleogryllus* Chopard, 1961

Key to species

1. Head without any marking .... *testaceus* (Walker)
- Head with a yellow band along the internal margin .... *occiptalis* (Servelle)

Genus *Teleogryllus* Chopard, 1961

29. *Teleogryllus testaceus* (Chopard)

1869 Gryllus *testaceus* Walker, *Cat. Derm. Salt. Br. Mus.*, I : 38.

1964. *Teleogryllus testaceus* : Chopard, *Can. Ent.*, 96(12) : 1596.

Material examined : 04 ex., Ghar Jarot Near Jaeali, 12.x.1999, Dhameta & party.

Diagnosis : Body large size; Head without any marking; colouration uniformly light testaceous; minor broader than long, rounded, divided in the middle by a curved vein; 4 oblique veins and 1 or 2 small ones in the angle of the stridulatory vein; male genitalia weakly acute at apex.

Distribution : India (Himachal Pradesh, Andamans Islands, Bihar Karnataka, Kerala, Orissa, Tamil Nadu, Uttar Pradesh.

Elsewhere : Borneo; Myanmar; Indochaina; Japan; Java; Malaya; Pahang; Philippines; Sri Lanka; Sumatra.

Genus *Teleogryllus* Chopard, 1961

30. *Teleogryllus occipitalis* (Serville)

1838. *Gryllus occipitalis* Serville, Handb. Ent., : 339.

1980. *Teleogryllus occipitalis* : Townsend, J. nat. Hist., **14** : 154.

Material examined : 01 ex., Nagrota Suria, 27.vii.2002, coll. S. Thakur & party

Diagnosis : Size a little smaller than preceding species; head with a yellow band along the internal margin of eyes; mirror broader than long, divided in the middle by a curved vein, 4 oblique veins; genitalia with large superior part, sinuated sides, and feedly acute at apex.

Distribution : India : Himachal Pradesh, Andaman Islands, Arunachal Pradesh, Assam, Bihar, Karnataka, Madhya Pradesh, Manipur, Meghalaya, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh, West Bengal.

Elsewhere : Bhutan; Japan; Laccadive; Archipelagoes; Maldive; Sri Lanka; Philippines and Tibet.

Genus ***Plebiogryllus*** Randell, 1954

31. ***Plebeiogryllus guttiventris*** (Walker)

1870. *Gryllus guttiventris* Walker, *Cat. Derm. Salt. Brit. Mus. Suppl.,* : 6

1964. *Plebiogryllus guttiventris* : Randell, *Can. Ent.* **6**(12) : 1598.

Material examined : 02 ex., Guglara, near Jawali, Dehra Pong Dam, 19.x.2000, coll. S. Thakur & party.

Diagnosis : Body medium size; (13.5-17.5 mm); colour brown, finely pubescent; head with light lines on occiput; posterior femora short and thick, feebly striated with brown; genitalia formed of a large piece with sinuted sides, ending into a blunt point.

Distribution : India : Himachal Pradesh, Bihar, Delhi, Goa, Karnataka, Kerala, Madhya Pradesh, Maharastra, Manipur, Orissa, Pondichery, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Myanmar; and Sri Lanka.

Genus ***Modicogryllus*** Chopard, 1961

32. ***Modicogryllus confirmatus*** (Walker)

1859. *Acheta confirmata* Walker, *Ann. Mag. nat. Hist.,* (3)**4** : 221.

1964. *Modicogryllus confirmatus* : Randell, *Can. Ent.,* **96**(12) : 1584.

Material examined : 02 exs., Ramsar Island Pong Dam, 24.xii.2001, Coll. H.S. Mehta.

Diagnosis : Size medium ; head brown with narrow yellow band connecting the lateral ocelli; occiput with [illegible] yellowish lines; mirror longer than wide, divided by a curved vein; 2 oblique veins; lateral field transparent, two anterior veins strongly curved and separated from the other posterior veins.

Distribution : India : Himachal Pradesh; Andamans Islands, Arunachal Pradesh, Assam, Bihar, Delhi, Haryana, Karnataka, Madhya Pradesh, Maharastra, Manipur, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh; Indo-Chaina; Israel; Malaya; Myanmar; Nepal; Sri Lanak and Thailand.

Subfamily NEMOBIINAE

Genus *Pteronemobius* Jac. & Bian

33. ***Pteronemobius fascipes*** (Walker)

1869. *Eneuoptera fascipes* Walker, *Cat. Derm. Salt. Brit. Mus.,* 1 : 67.

1931. *Pteronemobius fascipes* : Chopard, *Bull. Raffles Mus.*, No. **6** : 134.

Material examined : 02 ex. Water Sport Complex Pong Dam, Nagrotia Suria, 30.ix.2001, coll. H.S. Mehta & party; 01 ex., Ramsar Island Pong Dam, 24.xii.2001, coll. H.S. Mehta & party.

Diagnosis : Size small; Head blackish with four pale lines on the occiput, palpi blackish at base, with 4th and 5th joints white; pronotum brownish above; posterior tibiae with 3 external and 4 internal spines in male.

Distribution : India : Himachal Pradesh, Andaman Islands, Arunachal Pradesh, Assam Bihar, Delhi, Goa, Haryana, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharastra, Manipur, Meghalaya, Orissa, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : China; Malaya; Myanmar; Philippines; Sri Lanka and Taiwan.

Family PHALANGOPSIDAE

Genus *Homoegryllus*

34. ***Homoegryllus cincticornis*** (Walker)

1870. *Meloimorpha cincticornis* : Walker, *Cat. Derm. Salt. Br. Mus.*, **3** : 469.

1968. *Homoegryllus cincticornis* : Chopard, *Fauna of India, (Orthoptera : Grylloidea)*, **2** : 242.

Material examined : 03 ex., Guglara Pong Dam, Bhotali Nagrota Suria, 10.x.2000, coll. T.R. Sharma & party.

Diagnosis : Size rather large; clour very dark brown; face rufous yello, smooth; antennae pale brown with two first joints darker; in male elytra longer than the body; mirror almost one and a half times as wide as long; 10th tergite with projecting angle; In female elytra blackish with vein oblique.

Distribution : India : Himachal Pradesh, Maharasta; Tamil Nadu.

Family TRIGONIDIIDAE

Genus *Trigonidium* Rambur, 1839

35. ***Trigonidium cicindeloides*** Rambur

1839. *Triginidium cicindeloides* Rambur, *Faune Andal.*, **2** : 39.

Material examined : 02 exs., Nagrota Suria, 28.vii.2002, coll. S. Thakur & party.

Diagnosis : Body size small (4.5-5 mm); colour black, shiny with posterior legs light yellowish; subgenital plate of male conical, feebly notched at apex; ovipositor in female compressed, curved, acute at apex.

Distribution : India : Himachal Pradesh, Andaman Islands, Arunachal Pradesh, Assam, Bihar, Delhi, Goa, Karnataka, Madhya Pradesh, Maharastra,Manipur, Meghalaya, Mizoram, Orissa, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : Africa; Madagascar; Malaya; Mauritius Island, Mediterranean region; Myanmar and Sri Lanka.

Family TETTIGONIIDAE

Genus ***Mecopoda*** Serville, 1831

36. ***Mecopoda elangota*** (Linnaeus)

1758. *Gryllus elongates* Linnaeus, *Syst. Nat. (10th ed.)* **1** : 429.

1922. *Mecopoda elongate* Hebard, *Proc. Acad. nat. Sci. Philadelphia*, **74** : 182

Material examined : 03 exs. Ghart Jarot, Bhotali, Jawali Pong Dam, 12.x.1999, 17.x.2000, 29.vii.2002, coll. M.S. Verma, T.R. Sharma & party, S. Thakur & party.

Diagnosis : Body large size; colour brown; fastigium wide; posterior end of pronotum almost double width than the anterior region; subcosta sharply sinuate just beyond the middle; male subgenital plate conical; ovipositor straight being slightly narrowed at apex.

Distribution : India : Himachal Pradesh, Andaman Islands, Assam Karnataka; Maharastra, Orissa, Uttar Pradesh and West Bengal.

Elsewhere : Chaina; Japan; Malacca; Malaya.

Genus ***Ducetia*** Stal, 1874

37. ***Ducetia japonica*** (Thunberg)

1815. *Locusta japonica* Thunberg. *Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg*, **5** : 282

2004. *Ducetia japonica* Storozhenko. *Dlinousye pryamokrylye nasekomye (Orthoptera : Ensifera) asiatskoi chasti Rossii [Long-horned orthopterans (Orthoptera : Ensifera) of the Asiatic part of Russia]*, 62

Material : 01, 08.X.1999 Bari Near Dehra Gopipur.

Diagnostic Features : Head, pronotum and abdomen (in fresh specimens) varied with light greenish yellow and brown. Eyes globose, moderate in size; antennae filiform, longer than head and thorax together. Antennae inserted on the inferior margin of eyes. Tegmina more than four times longer their flexed maximum width; tibia is almost without denticles.

Distribution : Taiwan, Thialand, Philippines, Nepal. Myanmar, Malaysia, Sri Lanka, Myanmar, China etc.

Genus ***Letana*** Walker, F., 1869

38. ***Letana megastridula*** Ingrisch

1990. *Letana megastridula* Ingrisch. *Entomologica Scandinavica.* **21**(3) : 258.

Material : 01, 12.X.2000. Bhotali Haripur, Kangra.

Diagnostic Features : Body and legs with black or brown spots, stridulatory field layer longer than broad; supra anal plate almost circular, shallow depression in the middle; cerci with a weak base internal swelling.

REFERENCES

Bhowmick, H.K. 1985. Contribution to the Gryllidae fauna of the Western Himalayas (Orthoptera : Gryllidae) *Rec. Zool. Surv. India, Occ. Paper*, **73** : 1-74.

Bhowmick, H.K. and Halder, P. (1984) Preliminary distribution with remarks on little known species of Acrididae (Orthoptera : Insecta) from the western Himalayas (Himachal Pradesh). *Records of the Zoological Survey of India*, **81**(1&2) : 167-191.

Chopard, L. 1969. Fauna of India : Orthoptera : Grylloidae (Vol. 2) 421 pp. Published by the *Zoological Survey of India,* Calcutta.

Julka, J.M., Tandon, S.K., Halder, P. and Shishodia, M.S. (1982) Ecological observation on the grasshoppers (Orthoptera : Acrididae) dist Solan (H.P.), India. *Oriental Insects*, **61** : 63-71.

Pajni, H.R. and Kalra, M. 1986. A report on the Grylloidea of Chandigarh and surrounding areas (Orthoptera). *Res. Bull. (Science) Panjab Univ.*, **34** : 1-6.

Pajni, H.R. and Shaila, A. 1983. A report on the short horned grass hoppers of Chandigarh and surrounding areas (Acridoidea : Orthoptera). *Res. Bull. (Science) Panjab Univ.*, **34** : 1-6.

Tandon, S.K. 1976. A check list of the Acridoidea (Orthptera) of India. *Occasional Paper.* **3** : 1-48. Zoological Survey of India, Kolkata.

Uvarov, B.P. 1927. Distributional record of Indian Acrididae. *Record of the Indian Museum* **28** : 233-240.

Vasanth, M. 1993. Studies on crickets (Insecta : Orthoptera : Gryllidae) of Northeast India. *Rec. zool. Surv. India, Occ. Paper*, **132** : 1-178.

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, **12** : 65-92, 2009

PISCES

INDU SHARMA AND H. S. MEHTA
Zoological Survey of India, High Altitude Zoology Field Station, Solan–173 212

INTRODUCTION

Pong Dam is one of the largest man made wetland in the low foothills of Himalaya on the northern edge of Indo Gangetic plain. This wetland is also one of the 25 international wetlands under Ramsar Convention. Wetland is known as Ramsar site has been recognized internationally and situated in the Dhauladhar mountain ranges of Himachal Pradesh. It is formed due to the impoundment of the Dam on river Beas in district Kangra. It was meant primarily for the power generation, irrigation and flood control. The Dam has an area of 18,000 hectares and extends up to 30,000 hectares at the peak monsoon. An area of about 20,000 hectares within the radius of 5 km has been notified as the buffer zone.

The reservoir has a vast potential for fishery. The commercial fishing in the Wetland was initiated soon after the emergence of Dam. The literature particular to the Dam is scanty. Negi and Johal, 2005 reported 27 fish species belonging to 5 families from the dam.

Fauna of Himachal Pradesh represents 104 species spread over 8 orders, 14 families and 48 genera and out of which 55 species from the district Kangra (Mehta and Uniyal, 2005). Dhanze and Dhanze (2004), Tilak and Hussain (1977) recorded 52 and 31 species from the district Kangra and thus also includes the tributaries of the dam. The drainages of the district Kangra are important as two species i.e. *N. himachalensis* and *N. montanus* have the type locality in the same district.

Due to the change in the ecology of the Beas River i.e. from hill stream to lacustraine forms as due to damming a 40 km long reservoir is formed. The breeding of *Tor putitora* (Golden Mahseer) is affected. *Schizothorax richardsonii* and *Labeo dero* is under stress as their catches from dam are negligible. The exotic fishes introduced in the reservoir mainly *Cyprinus carpio* as well as the damming are the threats to the indigenous fauna. However, *Mystus seeghala* is the dominating fish in the Dam.

The surveys were carried out in the Pong Dam Lake and its tributaries *viz.* Baner, Awa, Gaj, Mole, Dehar and Dehari to know the ichthyo-faunal diversity of the reservoir.

During the present studies, a total of 57 species under 5 orders and 12 Families have been accounted from Dam and its tributaries. These comprised of 2 critical (CR) species *Glyptothorax garhwali* Tilak, *Glyptothorax stoliczkae* (Steindachner), 4 Endangered (En) species *Tor putitora* (Hamilton-Buchanan), *Tor tor* (Hamilton-Buchanan), *Noemacheilus himachalensis* Menon, *Noemacheilus montanus* (McClleland), 15 vulnerable (VU) species, 20 Lower Risk near threatened (LRnt) species and 2 Lower Risk least concern (LRlc) species under CAMP (1998).

The classification is followed of Menon (1987) and Jayaram (2004).

Order OSTEOGLOSSIFORMES

Family NOTOPTERIDAE

1. ***Notopterus notopterus*** (Pallus)

1769. *Gymnotus notopterus* Pallas, *Spicil. Zool.*, 7 : 40, pl. 6, fig. 2 (Type-*Locality* : Indian Ocean).

1976. *Notopterus notopterus* Misra, Fauna of India, Pisces (2nd ed.), 2 : 278, fig. 77 and pl. 7, fig. 3.

1991. *Notopterus notopterus* (Pallus) Talwar and Jhingran, *Inland Fishes*, **1** : 64, fig. 25.

Diagnostic Characters : Body oblong and laterally compressed, Head compressed, Gap of the mouth extends to the middle of the eye, Preorbital serrated, Dorsal fin inserted nearer snout-tip than to the base of caudal fin, Scales minute and comparatively larger on opercles than on the body.

Distribution : India : Throughout Indian subcontinent.

Elsewhere : Pakistan, Nepal, Bangladesh, Myanmar, Thailand, Malaya and Indonesia.

Status : CAMP : LRnt

Common Name : Grey featherback

Vernacular name : Pari, Purri

Order CYPRINIFORMES

Family CYPRINIDAE

Subfamily RASBORINAE

*2. ***Barilius barila*** (Hamilton-Buchanan)

1822. *Cyprinus* (Barilius) *barila* Hamilton-Buchanan, *Fishes of Ganges*: 267, 384 (type-*Locality.* : rivers of northern Bengal).

1878. *Barilius barila* Day, Fishes of India, 591, pl. 148, fig. 4.

1991. *Barilius barila* (Hamilton) Talwar and Jhingran, *Inland Fishes*, 1 : 343, fig. 120.

Material examined : 02exs, Baner Khud at Haripur, dist. Kangra (H.P.), 31.i. 2001, Coll. L.P. Dubey and Party. 07 exs, 10 Km from Nagrota Surian, Kangra (H.P.), 12.ii.1999, Coll. T.R. Sharma and Party.

Diagnostic Characters : Body shallow, Barbles two pairs, Rostral pair very short and the maxillary barbels reaches up to anterior third of the orbit, Body with vertical bars and extend from back to lateral line, Dorsal fin inserted totally in advance of the anal fin, Scales moderate.

Distribution : India : Himachal Pradesh, Jammu and Kashmir, Delhi, Rajasthan, Uttar Pradesh, Madhya Pradesh, Bihar, West Bengal, Assam, Manipur, Nagaland and Orissa.

Elsewhere : Nepal, Bangladesh, Myanmar and Myanmar.

Status : CAMP : VU

Common Name : Barred baril

Vernacular name : Patha

•3. *Barilius barana* (Hamilton-Buchanan)

1822, *Cyprinus* (Barilius) *barila* Hamilton-Buchanan, *Fishes of Ganges* : 268,384 (type-Locality : Yamuna river and Brahmaputra river).

1878, *Barilius barana Fishes of India* : 592, pl. 148, figs. 1&2.

1991, *Barilius barna* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, 1 : 344.

Diagnostic Characters : Body moderately elongate, Maxilla extends to anterior third of orbit, Barbels absent, Body with 7-9 vertical bars, Dorsal fin inserted in advance of the anal fin, Scales moderate.

Distribution : India : Himachal Pradesh, Uttar Pradesh, Assam, Bihar, West Bengal, Karnataka, Meghalaya, Orissa, Rajasthan, Sikkim.

Elsewhere : Nepal, Bangladesh, Myanmar.

Status : CAMP : LRnt

Common Name : Barana barila

Vernacular name : Bhareli

4. *Barilius bendelisis* (Hamilton-Buchanan)

1807. Cyprinus *bendelisis*, Hamilton-Buchanan, Journey in Mysore, 3 : 345, pl.32, (Type-Locality : Vedawati Stream, Headwaters of Krishna river near Heriuru, Mysore).

1878. *Barilius bendelisis* Day *Fishes of India*: 590, pl. 148, figs. 7&8.

1991. *Barilius bendelisis* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 346.

Material examined : 10exs, Dehar Khud at nagrota Surian, dist. Kangra (H.P.) 25.i.2001, Coll. L.P. Dubey and Party.

Diagnostic Characters : Body shallow, Maxilla extends to below anterior third of orbit, Two pair of barbels, Rostral pair comparatively short, Dorsal fin inserted completely in advance of the anal fin, Placed nearer to the base of the caudal fin than the snout tip, Anal fin short with eight to eleven branched rays, Scales moderate.

Distribution : India: Himachal Pradesh, Jammu & Kashmir, Assam, Maghlaya, Bihar, Haryana, Karnataka, Kerala, Orissa, Punjab, Rajasthan, Sikkam, Tamil Nadu, Uttar Pradesh, West Bengal, Maharashtra.

Elsewhere : Pakistan, Nepal, Bangladesh and Sri Lanka

Status : CAMP : LRnt

Common Name : Hamilton's barila

Vernacular name : Patha

5. ***Barilius vagra*** (Hamilton-Buchanan)

1822. *Cyprinus (Barilius) vagra* Hamilton-Buchanan, *Fishes of Ganges*: 269, 385 (Type-Locality : Ganga river at Patna).

1878. *Barilius bagra* Day *Fishes of India* : 589, pl. 148, fig. 3

1991. *Barilius vagra* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, **1** : 353, fig. 123.

Material examined : 2 exs, Dehar Khud at Nagrota Surian, dist. Kangra (H.P.) 25.i.2001, Coll. L.P. Dubey and Party.

Diagnostic Characters : Body shallow, Maxilla extends to below middle of orbit, Barbels two pairs and very short, Dorsal fin inserted anterior to anal fin, Body with vertical small bars and much above the lateral line, Scales moderate.

Distribution : India: Himachal Pradesh, Jammu & Kashmir, Assam, Bihar, Punjab, Uttar Pradesh, West Bengal, Sikkim.

Elsewhere : Bangladesh, Pakistan, Nepal, Sri Lanka

Status : CAMP : Vu

Common Name : Vagra baril

Vernacular name : Chal, Patha and Lahani

*6. ***Brachydanio rerio*** (Hamilton-Buchanan)

1822. *Cyprinus rerio* Hamilton-Buchanan, *Fishes of Ganges*: 323, 390 (Type-*Locality* : Kosi river, U.P.).

1878. *Danio rerio* Day, *Fishes of India*: 597, pl. 151, fig. 4.

1991. *Brachydanio rerio* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 360.

Material examined : 2 exs, bangali, 6Km from Haripur, Kangra (H.P.), 31.i.2001, Coll. L.P. Dubey and Party.

Diagnostic Characters : Body elongate and slightly compressed, Barbels two pairs, Maxillary barbels extend beyond the base of pectoral fin, Body with well distinguished four shining gold longitudinal bands from head to caudal fin, Lateral line absent, Scales moderate in size.

Distribution : India : Himachal Pradesh, Uttar Pradesh, Andhra Pradesh, Bihar, Karnataka, Orrisa, Punjab, Sikkim, Tamil Nadu, West Bengal.

Elsewhere : Bangladesh, Nepal, Pakistan and Myanmar

Status : CAMP : LRnt.

Common Name : Zebrafish

Vernacular name : Chahal

*7. ***Danio devario*** (Hamilton-Buchanan)

1822. *Cyprinus devario* Hamilton-Buchanan, Fishes of Ganges : 341,393, pl. 6, fig. 94 (Type-Locality . Rivers and ponds of Bengal).

1878. *Danio devario* Day, *Fishes of India* : 595, pl. 50, fig. 4.

1991. *Danio devario*, (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1: 367, fig. 130.

Material examined : Observed 2exs, Dehri Khud about 14 Km from Nagrota Surian, dist. Kangra (H.P.), 20.v.2007.

Diagnostic Characters : Body rhomboidal and compressed, Mouth small and directed upwards, Barbels absent, Dorsal fin inserted slightly anterior to anal fin, Dorsal fin with 15 to 17 branched rays, Scales moderate in size.

Distribution : India: Himachal Pradesh, Jammu and Kashmir, Uttar Pradesh, Assam, Bihar, Gujarat, Punjab, Haryana, Orrisa, Rajasthan, West Bengal.

Elsewhere : Bangladesh, Myanmar, Pakistan.

Status : CAMP : LRnt

Common Name : Devario danio

Vernacular name : Maalle, Mukhni

*8. ***Esomus danricus*** (Hamilton-Buchanan)

1822. *Cyprinus danrica*, Hamilton-Buchanan, Fishes of Ganges : 325, 390, pl. 16, fig. 88 (Type-Locality : Ponds and ditches of Bengal).

?1867. *Esomus malabaricus* Day, *Proc.zool. Soc. Lond.*: 229 (type-Locality : Trichoor, Kerala).

1991, *Esomus danricus* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 377, fig. 134.

Material examined : 3 exs, Dehri Khud about 14 Km from Nagrota Surian, dist. Kangra (H.P.) 20.v.2007, Coll. Indu Sharma and Party.

Diagnostic Characters : Body elongate and compressed, Mouth small, Barbels two pairs, Rostral barbels short, Maxillary barbels long and extend to middle of the body, pectoral fin long and pointed, Lateral line complete, lateral line in complete, Dorsal fin inserted between pelvic and anal fin, Broad dark lateral band from mouth up to caudal fin, Scales of moderate size.

Distribution : India : Himachal Pradesh, Jammu and Kashmir, Punjab, Uttar Pradesh, Assam, Bihar, Delhi, Goa, Daman and Diu, Gujarat, Madhya Pradesh, Orissa, Tamil Nadu, West Bengal.

Elsewhere : Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand.

Status : CAMP : LRlc

Common Name : Flying barb

Vernacular name : Chilwa

*9. ***Parlucisoma daniconius*** (Hamilton-Buchanan)

1822. *Cyprinus daniconius* Hamilton-Buchanan, Fishes of Ganges : 327, pl. 15, fig. 89 (Type-Locality : Rivers of Southern Bengal)

1980. *Parlucisoma Howes, Bull. Br. Mus. nat. Hist.* (Zool.), 37(3) : 183 (type-species : *Leuciscus argyrotaenia* Bleeker).

1991. *Parlucisoma daniconius* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, 1 : 382, fig. 136.

Material examined : 9exs, Dehri Khud, About 14 Km from nagrota Surian, dist. Kangra (H.P.), 25.i.2001, Coll. L.P. Dubey and Party, 1ex, Karis, Pong Dam, Dist. Kangra (H.P.), 16.ix.2000, Coll. G. Thirumali and Party.

Diagnostic Characters : Body elongate and compressed, Mouth small, Barbels absent, Dorsal fin inserted behind the origin of pelvic fin, A distinct black streak from eye to base of caudal fin, Scales large.

Distribution : India : Through out India.

Elsewhere : Bangladesh, Myanmar, Malaya, Myanmar, Pakistan, Sri Lanka, Thailand.

Status : CAMP : LRnt

Common Name : Blackline rasbora

Vernacular name : Bhareli

●10. ***Raiamas bola*** (Hamilton-Buchanan)

1822, *Cyprinus bola* Hamilton-Buchanan, *Fishes of Ganges* : 274, 385 (Type-Locality : Brahmaputra river).

1937. *Barilius (Opsarius) bola* : Hora, 1937, *J. Bombay nat. Hist. Soc.*, 39(2) : 199, pl. 1, figs 1-3 (Rediscription).

1991. *Raiamas bola* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 384, fig. 137.

Diagnostic Characters : Body moderately elongated and compressed, Barbels absent, Dorsal fin inserted near the caudal fin base than to snout tip, Lateral line complete, Body with scattered blue spots, Scales very small.

Distribution : India : Himachal Pradesh, Assam, Bihar, Haryana, Orrisa, Punjab, Rajasthan, Uttar Pradesh, West Bengal, Manipur.

Elsewhere : Bangladesh, Myanmar, Nepal, Pakistan.

Status : CAMP : VU

Common Name : Indian Trout

Subfamily CYPRININAE

11. ***Crassius auratus auratus*** (Linneaus)

1758. *Cyprinus auratus* Linnaeus, *Systema Naturae*, ed. 10, 1 : 323 (Type-Locality : Rivers of China and Japan).

1877. *Carassius auratus* : Day, Fishes of India 552.

1889. *Carassius auratus* : Day, *Fauna Br. India*, Fishes, 1 : 283 (footnote).

1991. *Crassius auratus auratus* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, 1 : 161.

Material examined : 3 exs observed at Jawali Landing Centre, 28 km from Nagrota Surian, dist. Kangra, coll. Indu Sharma & party, 15.iii.2006.

Diagnostic Characters : Body stout, Head and mouth small, Dorsal fin inserted nearer to snout tip than to base of caudal fin, Anal fin with five branched rays, No blotch on caudal peduncle, Scales large and cycloid.

Distribution : India : Throughout Indian subcontinent

Elsewhere : China, Japan

Common Name : Goldfish

Vernacular name : Lal Machi.

12. ***Crassius crassius*** (Linnaeus)

1758. *Cyprinus carassius* Linnaeus, Systema Naturae, ed. 10, 1 : 321 (Type-Locality : Europe).

1955. *Carassius carassius* : Munro, *Marine and Fresh Water Fishes* Ceylone : 42, pl. 7.

1991. *Crassius crassius* (Linnaeus), Talwar and Jhingran, *Inland Fishes*, 1 : 162.

Material examined : 2 exs observed at Jawali Landing Centre, 28 km from Nagrota Surian, dist. Kangra, coll. Indu Sharma & party, 15.iii.2006.

Diagnostic Characters : Body deep, Mouth small, dorsal fin inserted nearer to snout tip than to base of caudal fin, Dorsal spine strong, Anal fin with six to eight branched rays, A spot on caudal peduncle, Scales moderate.

Distribution : India : Throughout Indian Subcontinent.

Elsewhere : China, Korea, Japan, Taiwan, Europe, East Asia, Siberia, South to North Vietnam.

Common Name : Crucian carp

Vernacular name : Sunehari Machi

13. *Catla catla* (Hamilton-Buchanan)

1822. *Cyprinus catla* Hamilton-Buchanan, *Fishes of Gangaes* : 287, 318, pl. 13, fig. 81(Type-Locality : Rivers and tanks of Bengal).

1966. *Catla catla* Jhingran, FAO *World Symposium on Warm-water Pond Fish Culture* : 18 (Synopsis biological data).

1991. *Catla catla* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, **1** : 163, fig. 62.

Material examined : 4 exs of weight about 3 kg were observed at Nagrota Surian, dist. Kangra (H.P.), coll. Indu Sharma & party, 19.V.2007.

Diagnostic Characters : Body deep, head large, Lower lip thick with protruding lower jaw, Dorsal fin long and without any spine, Dorsal fin inserted above the tip of the pectoral fin, Barbels absent, Scales large.

Distribution : Throughout India.

Elsewhere : Pakistan, Bangladesh, Thailand, Myanmar, Sri Lanka and Siam.

Status : CAMP : VU

Common Name : Catla

Vernacular name : Catla

14. *Cirrhinus reba* (Hamilton-Buchanan)

1822, *Cyprinus reba* Hamilton- Buchanan, *Fishes of Gangaes* : 386, (Type-Locality : Rivers and ponds of Bengal and Bihar).

1877. *Cirrhina reba*, Day, Fishes of India : 549, pl. 130, fig. 3.

1991. *Cirrhinus reba* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, **1** : 173.

Material examined : 3exs were observed at Nagrota Surian, dist. Kangra (H.P.), coll. Indu Sharma & party, 19.v.2007.

Diagnostic Characters : Body elongated, Mouth broad, Dorsal fin inserted in advance of pelvic fin, Dorsal fin height less than body depth. Pectoral fin as long as the head, lateral line scales 35 to 38, Scales moderate in size.

Distribution : India : Throughout.

Elsewhere : Bangladesh, Myanmar, Pakistan, Thailand

Status : CAMP : VU

Common Name : Reba carp

Vernacular name : Mori, Reba

15. *Cirrhinus mrigala mrigala* (Hamilton-Buchanan)

1822. *Cyprinus mrigala* Hamilton-Buchanan, *Fishes of Ganges* : 279, 386 (Type-Locality : Ponds and freshwaters rivers of Gangetic provinces).

1877. *Cirrhina mrigala* Day, Fishes of India : 547, pl. 129, fig. 4.

1991. *Cirrhinus mrigala mrigala* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, **1** : 172, fig. 65.

Material examined : 1ex, Jawali, Pong Dam Wetland, Dist. Kangra (H.P.), 15.iii.2006, coll. Indu Sharma and Party.

Diagnostic Characters : Body elongated, Mouth broad, Single pair of short rostral barbles present, Length of head equal to body depth, Pectoral fin shorter than head, scales moderate.

Distribution : India : Northern India.

Elsewhere : Nepal, Bangladesh and Pakistan.

Status : CAMP : LRnt

Common Name : Mrigal

Vernacular name : Mori, Mrigal

16. *Ctenopharyngodon idellus* (Valenciennes)

1844. *Leucisus idella* Valenciennes, *Hist. nat. Poiss.*, **17** : 362 (Type-Locality : China).

1981. *Ctenopharyngodon idellus*, Howes, *Bull.Br. Mus. nat. Hist.* (Zool.), **41**(1) : fig. 30a.

1991. *Ctenopharyngodon idellus* (Valenciennes) Talwar and Jhingran, *Inland Fishes*, **1** : 175, fig. 66.

Material examined : 2exs, observed at Sansarpur Terrace Pong Dam, coll. Indu Sharma & party, 12.iii.2006.

Diagnostic Characters : Body elongated, Head broad, Barbels absent, Dorsal fin inserted slightly nearer to snout tip than to base of caudal fin, Dorsal fin without spine, Pectoral fin small, Scales moderate in size and cycloid.

Distribution : India : Introduced in India.

Elsewhere : Siberia, Machuria, North to South China, Lower reaches of River Amur..

Common Name : Grass Carp

17. ***Cyprinus carpio communis*** Linnaeus

1758. *Cyprinus carpio* Linnaeus, *Systema Naturae,* ed.10, 1 : 320 (Type-*Locality* : Europe).
1991. *Cyprinus carpio* var. *communis,* Talwar & Jhingran, *Inland Fishes,* 1 : 185.

Material examined : 3exs of 2-3 Kg were observed at Sansarpur Terrace, coll. Indu Sharma & party, 12.iii.2006.

Diagnostic Characters : Body slightly compressed, Head large, Barbels two pairs, Dorsal fin inserted midway between snout tip and base of caudal fin, Dorsal spine stout and long, Body covered with regularly arranged rows of scales, Scales large.

Distribution : India : Through out India.

Elsewhere : America, China, Europe, Japan, Korea, Taiwan

Common Name : Scale carp

Vernacular name : Common Carp

18. ***Cyprinus carpio specularis*** Lacepeds

1973. *Cyprinus carpio* var. *specularis,* Bhatanagar, *J. Inland Fish. Soc. India,* 5, p. 135.
1991. *Cyprinus carpio* var. *specularis,* Talwar & Jhingran, *Inland Fishes,* 1 : 185.

Material examined : 2exs of 2Kg were observed at Sansarpur Terrace, coll. Indu Sharma & party, 12.III.2006.

Diagnostic Characters : Body compressed, Head large, Barbels two pairs, Dorsal fin inserted midway between snout tip and base of caudal fin, Dorsal spine stout and long, Body covered with scattered scales, Scales large.

Distribution : India : Throughout.

Elsewhere : America, China, Europe, Japan, Korea, Taiwan

Common Name : Mirror carp

Vernacular name : Mirror carp

•19. ***Labeo bata*** (Hamilton-Buchanan)

1822. *Cyprinus bata* Hamilton-Buchanan, *Fishes of Ganges* : 283, 386 (Type-locality : Rivers and ponds of Bengal).
1877. *Labeo bata,* Day, Fishes of India : 542, pl. 129, fig. 5.
1991. *Labeo bata* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes,* 1 : 199, fig. 72.

Diagnostic Characters : Body elongated, Lower lip slightly fringed and folded, Eyes large, A small maxillary pair of barbels, Dorsal fin inserted near to snout tip than base of caudal fin, Pectoral fin equal to head length, Scales moderate.

Distribution : India: Himachal Pradesh, Uttar Pradesh, Madhya Pradesh, Bihar, Orrisa, West Bengal, Maharashtra, Andhra Pradesh.

Elsewhere : Bangladesh, Nepal (Introduced).

Status : CAMP : LRnt

Common Name : Batalabeo

Vernacular name : Bata

20. ***Labeo calbasu*** (Hamilton-Buchanan)

1822. *Cyprinus calbasu* Hamilton-Buchanan, *Fishes of Ganges* : 297, 387, pl. 2, fig. 33 (Type-Locality : Rivers and Ponds of Bengal in the western provinces).

1877. *Labeo calbasu*, Day; Fishes of India : 536, pl. 126, fig. 4.

1991. *Labeo calbasu* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, **1** : 203, fig. 74.

Material examined : 2exs observed at Jawali, Pong Dam, 15.iii.2007, coll. Indu Sharma & party.

Distribution : India : Punjab, Delhi, Assam, Bihar, Andhra Pradesh, Gujarat, Karanataka, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh, Myanmar, China, Nepal, Pakistan, Thailand.

Status : CAMP : LRnt

Common Name : Kalabasu

Vernacular name : Kalbans, Kalbose.

•21. ***Labeo dero*** (Hamilton-Buchanan)

1822. *Cyprinus dero* Hamilton-Buchanan, *Fishes of Ganges* : 277, 385, pl. 22, fig. 78 (Type-Locality : Brahmaputra river).

1936. *Labeo dero* Hora and Mukerji, *Rec. Indian Mus.*, **38**(2) : 142, fig. 3.

1991. *Labeo dero* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, **1** : 204.

Diagnostic Characters : Body elongated, Snout distinct, Snout with distinct groove, Head small, Eyes small, One small pair of maxillary barbels, Dorsal fin inserted mid between snout tip and origin of anal fin, Pectoral fin shorter than head, Scales moderate.

Distribution : India : Jammu and Kashmir, Punjab, Haryana, Delhi, Assam, Bihar, Rajasthan, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh, China, Pakistan, Sri Lanka.

Status : CAMP : VU

Common Name : Kalabans

Vernacular name : Gid

•22. ***Labeo dyocheilus*** (McClelland)

1839. *Cyprinus (Labeo) dyocheilus* McClelland, *Asiat. Res.*,. 19(2) : 268, 330, pl. 37, fig. 1 (Type-locality ; Brahmaputra river).

1889. *Labeo dyochilus*, Day, *Fauna Br. India*, Fishes, 1 : 266.

1991. *Labeo dyocheilus* (McClelland) Talwar and Jhingran, *Inland Fishes*, 1 : 207, fig. 75.

Diagnostic Characters : Body elongated, Snout conical, Tubercles on snout prominent, Eyes small, Lower lip interrupted and folded, One pair of short maxillary barbels, Dorsal fin inserted equidistance between snout tip and base of caudal fin, Scales moderate.

Distribution : India : Jammu and Kashmir, Punjab, Uttar Pradesh, Assam, Sikkim.

Elsewhere : Pakistan, Nagaland, Bangaladesh, Nepal.

Status : CAMP : VU

Common Name : Brahmaputra labeo

Vernacular Name : Butael, Torki

23. ***Labeo rohita*** (Hamilton-Buchanan)

1822. Cyprinus rohita Hamilton-Buchanan, *Fishes of Ganges* : 301, 388, pl. 36, fig. 85 (Type-Locality : Freshwater rivers of Gangetic provinces).

1877. *Cirrhina reba*, Day, Fishes of India : 538, pl. 127, fig. 4.

1991. *Labeo rohita* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 219, fig. 78.

Material examined : 6exs observed at Nagrota Surian landing centre, Pong Dam, 14.iii.2007.

Diagnostic Characters : Body elongated, Snout depressed, Eyes large, Mouth small, Lips thick and with a distinct inner fold to lips, Dorsal fin inserted middle of snout tip and base of caudal fin, branched dorsal fin rays 12 to 14. Pectoral fin shorter than head, Scales moderate.

Distribution : India: Punjab, Delhi, Uttar Pradesh, Assam, Bihar, Gujarat, Madhya Pradesh, Maharashtra, Orissa, West Bengal (Introduced).

Elsewhere : Pakistan, Bangladesh, Myanmar.

Status : CAMP : LRnt

Common Name : Rohu

Vernacular name : Rohu

*24. ***Puntius chola*** (Hamilton-Buchanan)

1822. *Cyprinus chola* Hamilton-Buchanan, Fishes of Ganges : 312, 289 (Type-Locality : Northeastern parts of Bengal).

1991. *Puntius chola (*Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 263, fig. 90.

Material examined : 3 exs, Bangali, 6 km from Haripur, Kangra (H.P.), L.P. Dubey and Party, 30.i.2001, 2 exs, Baner Khud at Haripur, dist. Kangra (H.P.), 31.i.2001, Coll. L.P. Dubey and Party, 4 exs, 10 Km from Nagrota Surian, Kangra (H.P.), 12.ii.1999, Coll. T.R. Sharma and Party.

Diagnostic Characters : Body moderate elongate and compressed, Head short, Barbels one pair of maxillary, Predorsal scales 10-12, Dorsal fin inserted midway between snout tip and base of caudal fin, Body marked with two prominent blotches, on operculum and base of caudal fin, Scales moderate.

Distribution : India : Throughout.

Elsewhere : Bangladesh, Myanmar, Pakistan, Sri Lanka.

Status : CAMP : VU

Common Name : Chola barb

Vernacular name : Chidhu

•25. *Puntius conchonius* (Hamilton-Buchanan)

1822, *Cyprinus conchonius* Hamilton-Buchanan, *Fishes of Ganges* : 317, 389(Type-Locality : Ponds of Northeast Bengal; Kosi river and Ami river).

1982. *Puntius conchonius*, Day, *Fishes of India* : 576, pl. 143, fig. 7.

1991. *Puntius conchonius (*Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 266.

Diagnostic Characters : Body deep and compressed, Barbels absent, Predorsal scales 8-9, Dorsal fin inserted equidistance between tip of snout and base of caudal fin, Black spot over posterior portion of anal fin, No spot on operculum, Scales medium.

Distribution : India : Throughout Indian Subcontinent.

Elsewhere : Pakistan, Bangladesh

Status : CAMP : VU

Common Name : Rosy Barb

Vernacular name : Chidhu

26. *Puntius sarana sarana* (Hamilton-Buchanan)

1822. *Cyprinus sarana* Hamilton-Buchanan, *Fishes of Ganges* : 307, 388 (Type-Locality : Ponds and rivers of Bengal).

1991. *Puntius sarana sarana (*Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 283, fig. 96.

Material examined : 2 exs, Bangali, 6 km from Haripur, Kangra (H.P.), L.P. Dubey and Party 30.i.2001.

Diagnostic Characters : Body moderately elongated, Head small, Barbels two pairs, Maxillary pair of barbels comparatively longer than rostral, Predorsal scales 11 or 12, Dorsal fin inserted nearer to tip of snout than to base of caudal fin, A dull black blotch near the base of caudal fin, Scales medium.

Distribution : India : Throughout Indian Subcontinent.

Elsewhere : Pakistan, Bangladesh, Bhutan, Myanmar, China, Nepal, Sri Lanka, Thailand

Status : CAMP : VU

Common Name : Olive barb

Vernacular name : Puthia, Sarian

*27. ***Puntius sophore*** (Hamilton-Buchanan)

1822. *Cyprinus sophore* Hamilton-Buchanan, *Fishes of Ganges* : 310, 389 (nec pl. fig. 86) (Type-Locality : Ponds and rivers in Gangetic provinces).

?1970. *Puntius carletoni*, Tilak, *Sci. & Cult.*, 36(11) : 613, fig. 1.

1991 *Puntius sophore* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 288, fig. 99.

Material examined : 1 ex, Karis, Pong Dam, Kangra (H.P.), G. Thirumali and Party, 16.x.2000, 15 exs, Dehri Khud, about 14 km from Nagrota Surian, Dist. Kangra (H.P.), 25.i.2001, Coll. L.P. Dubey and Party.

Diagnostic Characters : Body deep, Head short, Barbels absent, Predorsal scales 8-10, Dorsal fin inserted midway between tip of snout and base of caudal fin, Dorsal spine smooth, A black blotch on the base of caudal fin present, Scales medium.

Distribution : India : Throughout Indian Subcontinent

Elsewhere : Pakistan, China, Nepal, Bangladesh, Myanmar.

Status : CAMP : LRnt

Common Name : Spot fin swamp barb

Vernacular name : Puthi, Chidu

28. ***Puntius ticto*** (Hamilton-Buchanan)

1822. *Cyprinus ticto* Hamilton-Buchanan, Fishes of Ganges : 314, 398 pl. 8, fig. 87 (Type-Locality : South-eastern parts of Bengal).

1991. *Puntius ticto* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 291, fig. 101.

Material examined : 2 exs, Karis, Pong Dam, Kangra (H.P.), L.P. Dubey and Party, 16.x.2000.

Diagnostic Characters : Body deep, Mouth small, Barbels absent, Dorsal fin inserted slightly posterior to pelvic fin origin, Dorsal spine serrated, A black blotch on or near to pectoral fin and on the base of the caudal fin, Scales medium.

Distribution : India : Throughout Indian Subcontinent.

Elsewhere : Pakistan, Sri Lanka, Thailand, Bangladesh, Thailand.

Status : CAMP : LRnt

Common Name : Ticto barb

Vernacular name : Ticto, Puthi

29. *Tor putitora* (Hamilton-Buchanan)

1822. *Cyprinus putitora* Hamilton-Buchanan, *Fishes of Ganges* : 303, 388 (Type-Locality : Eastern parts of Bengal).

1982. *Tor putitora* Tilak and Sharma, *Game Fishes of India and Angling* : 39, figs. 4, 5 & 6.

1991. *Tor putitora* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 308, fig. 109.

Material examined : 2 exs, Dehar Khud, Near Nagrota Surian, Pong Dam, Kangra (H.P.), Indu Sharma & Party, 19.v.2007.

Diagnostic Characters : Body elongated, Head large, Length of head more than depth of body, Dorsal fin inserted parallel to pelvic fin, Barbels Two pairs, Scales large.

Distribution : India : Throughout Northern States.

Elsewhere : Pakistan, Nepal, Bangladesh.

Status : CAMP : Endangered

Common Name : Putitor mahseer

Vernacular name : Chitratu, Mahseer

●30. *Tor tor* (Hamilton-Buchanan)

1822. *Cyprinus tor* Hamilton-Buchanan, *Fishes of Ganges* : 305, 388 (Type-Locality : Mahananda river, West Bengal).

1940. *Barbus* (*Tor*) *tor*, Hora, *J. Bombay nat Hist. Soc.*, **41**(3) : 518, text-fig. and pls. 1,2 & 3.

1991. *Tor tor* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 309, fig. 110.

Diagnostic Characters : Body stout and deep, Head small, Head shorter than depth of body, Barbels two pairs, Dorsal fin inserted above pelvic fin, Scales large.

Distribution : India : All northern states.

Elsewhere : Pakistan, China, Myanmar, Bangladesh

Status : CAMP : Endangered

Common Name : Tor Mahseer

Vernacular name : Mahsir

Subfamily SCHIZOTHORACINAE

31. ***Schizothorax richardsonii*** (Gray)

1832. Cyprinus richardsonii Gray, *Illustration of Indian Zoology*, (10) : Pl. 14, fig. 2.

1987. *Schizothorax richardsonii*, Tilak, *Fauna of India*, Pisces : 50, figs 12-24.

1991. *Schizothorax richardsonii* (Gray) Talwar and Jhingran, *Inland Fishes*, **1** : 411, fig. 145.

Material examined : 2 exs, Dehar Khud, Near Nagrota Surian, Pong Dam, Kangra (H.P.), Indu Sharma & Party, 19.v.2007.

Diagnostic Characters : Body streamlined, barbels two pairs, Lower jaw with hard, horny sharp edge, Dorsal fin inserted midway between snout tip and base of caudal fin, Dorsal spine strong and serrated, Scales very small.

Distribution : India : Jammu and Kashmir, Punjab, Uttar Pradesh, Assam, Sikkim.

Elsewhere : Pakistan, Nepal, Bhutan, Afghanistan.

Status : CAMP : VU

Common Name : Trout

Vernacular name : Gugali, Tallarhe

32. ***Crossocheilus latius latius*** (Hamilton-Buchanan)

1822, *Cyprinus latius* Hamilton-Buchanan, Fishes of Gangaes : 345, 393 (Type-Locality : Tista river at base of Darjeeling Himalaya).

1938, *Crossocheilus latius*, Hora and Misra, *J. Bombay nat. Hist. Soc.*, **40**(1) : 31, pl. 2, fig. 2.

1991, *Crossocheilus latius latius* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, **1** : 416, fig. 147.

Material examined : 2exs, Nagrota Surian, Pong Dam Wetland, 19.v.2007.

Diagnostic Characters : Body elongated, Head flat and compressed, Barbels two pairs, Rostral barbels short, Gillrakers 37 to 39 on first arch, Lateral line scales 39 to 41, Dorsal fin inserted midway between pectoral and pelvic fin, Scales moderate.

Distribution : India : Maharashtra, Orissa.

Elsewhere : Bangladesh, Nepal, Pakistan.

Status : CAMP : DD (Data Deficient)

Common Name : Gangetic latia

Vernacular name : Taler, Telaria

●33. *Crossocheilus latius diplocheilus* (Heckel)

1838. *Barbus diplochilus* Heckel, Fische aus Caschmir : 53, pl. 10, fig. 1. (Type-Locality : Kashmir).
1960. *Crossocheilus latius diplocheilus*, Silas, *J. Bombay nat. Hist. Soc.*, 57(1) : 67, pl. 2, figs. 9 & 10.
1991. *Crossocheilus latius diplocheilus* (Heckel) Talwar and Jhingran, Inland *Fishes*, **1** : 415, fig. 146.

Diagnostic Characters : Body stout and build, Head flat and compressed, Barbels two pairs, Gillrakers 17 to 21 on first arch, Lateral line scales 36 to 38, Scales moderate.

Distribution : India : Himachal Pradesh, Jammu and Kashmir, Punjab, Delhi, Uttar Pradesh.

Elsewhere : Afghanistan, Pakistan.

Common Name : Tellarree, Behrah

Local Name : Tellarree

*34. *Garra gotyla gotyla* (Gray)

1832. *Cyprinus gotyla* Gray, *Illustr. Indian Zool.*, **1** : pl. 88, fig. 3, 3a, (Type-Locality : Northern India).
1964. *Garra gotyla gotyla*, Menon, *Mem. Indian Mus.*, **14**(4) : 233, pl. 13, figs 1-4.
1991. *Garra gotyla gotyla* (Gray) Talwar and Jhingran, *Inland Fishes*, **1** : 421.

Material examined : 2 exs, Gaj stream, Nagrota surian, 19.v.2007, coll. Indu Sharma and Party.

Diagnostic Characters : Body elongated, Head depressed, Snout with a well developed median proboscis and at transverse lobe at tip, Barbels two pairs, Dorsal fin inserted nearer tip of snout than to caudal fin base, Pectoral fin shorter than head length, Scales moderate in size.

Distribution : India : Himachal Pradesh, Jammu and Kashmir, Assam, Bihar, Delhi, Manipur, Nagaland, Punjab, Rajasthan, Sikkim, Uttar Pradesh, Madhya Pradesh, West Bengal, Manipur.

Elsewhere : Bangladesh, Myanmar, Nepal, Pakistan

Status : CAMP : VU

Common Name : Gotyla

Vernacular name : Kurka

●35. *Garra lamta* (Hamilton-Buchanan)

1822. *Cyprinus (Garra) lamta* Hamilton-Buchanan (partim), *Fishes of Ganges* : 343, 393 (Type-Locality : Rapti river, Gorakhpur, U.P.).
1991. *Garra gotyla gotyla* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, **1** : 426.

Diagnostic Characters : Body subcylindrical, Head short and bluntly pointed, Snout rounded and smooth, Mouth wide, Barbels two pairs, Dorsal fin inserted nearer tip of snout than to base of caudal fin, Pectoral fin longer than head, Scales moderate in size.

Distribution : India : Himachal Pradesh, Assam, Sikkim, Darjeeling and Kumaon Himalayas.

Elsewhere : Nepal.

Common Name : Lamta Garra

Vernacular name : Kurka

Family HOMALOPTERIDAE

Subfamily NOEMACHEILINAE

*36. ***Noemachielus botia*** (Hamilton-Buchanan)

1822. *Cobitis botia* Hamilton-Buchanan, Fishes of Ganges : 350, 394 (Type-Locality : Rivers of north-eastern Bengal).

1987. *Noemachielus botia*, Menon, Fauna of India, Pisces, 4 : 141, pl. 5, fig. 5.

1991. *Nemacheilus botia* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 472, fig. 161.

Material examined : 10 exs, Baner Khud at Haripur, dist. Kangra (H.P.), 31. i.2001, coll. L.P. Dubey and Party.

Diagnostic' Characters : Body slender, Lower lip interrupted, Barbels well developed, Dorsal fin inserted nearer to snout tip than base of caudal fin, Body with irregular blotches, lateral line complete, Scales minute.

Distribution : India : Throughout Indian states

Elsewhere : Pakistan.

Status : CAMP : LRnt

Vernacular name : Nai

*37. ***Noemacheilus horai*** Menon

1822, *Cobitis botia* Hamilton-Buchanan, Fishes of Ganges : 350, 394 (Type-Locality : Rivers of north-eastern Bengal).

1987. *Noemachielus horai* Menon Fauna of India, Pisces, 4 : 74, Pl. 3, fig. 1 and pl. 16, fig. 3.

1991. *Nemacheilus horai* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, 1 : 483.

Material examined : 2 exs, Baner Khud at Haripur, dist. Kangra (H.P.), 31.i. 2001, coll. L.P. Dubey and Party.

Diagnostic Characters : Body cylindrical and stout, Lower lip interrupted in middle, Barbels well developed, Dorsal fin inserted equidistance between tip of snout and base of caudal fin, Caudal fin deeply forked, Lateral line complete, Four to six prominent bands present only in caudal region of the body, Scales small and absent on ventral side of body.

Distribution : India : Himachal Pradesh, Jammu and Kashmir and Punjab.

Elsewhere : Pakistan

Status : CAMP : VU

Vernacular name : Nai

●38. *Noemacheilus himachalensis* (Menon)

1987. *Noemacheilus himachalensis*, Menon, *Fauna of India*, Pisces, **4** : 76, pl. 16, fig. 2 (Type-locality : Naudan, Kangra dist., Himachal Pradesh).

1991. *Nemachielus himachalensis* (Menon) Talwar and Jhingran, *Inland Fishes*, **1** : 483.

Diagnostic Characters : Body slender and elongated, Lower lip interrupted in the middle, Barbels short and well developed, Dorsal fin inserted equidistance between tip of snout and base of caudal fin, Caudal fin deeply forked, Lateral line incomplete, Body marked with 8 to 10 bands and narrower than interspace,Dorsal and caudal fins unspotted, Scales minute.

Distribution : India : Himachal Pradesh : Nadaun (Beas River), Dist. Kangra (H.P.).

Status : CAMP : Endangered

●39. *Noemacheilus montanus* (McClleland)

1951. *Nemachielus Kangrae* Menon Rec. Indian Mus., 49(2) : 229, pl. 7, figs 4 & 5 (Type-locality : Kangra Valley, Himachal Pradesh).

1987. *Noemachielus montanus*, Menon, Fauna of India, Pisces, **4** : 78, pl. 11, figs 6 & 7.

1991. *Nemacheilus montanus* (McClelland) Talwar and Jhingran, *Inland Fishes*, **1** : 489.

Diagnostic Characters : Body elongated, Lower lip interrupted in middle, Barbles well developed, Dorsal fin inserted slightly nearer to base of caudal fin than to snout-tip, Caudal fin emarginated, Lateral line complete, caudal fin with a black band at its base and a bar across each lobe, Scales minute.

Distribution : India : Himachal Pradesh.

Status : CAMP : Endangered

Family COBITIDAE

Subfamily COBITINAE

*40. *Lepidocephalus guntea* (Hamilton-Buchanan)

1822, *Cobitis guntea* Hamilton-Buchanan, Fishes of Ganges : 353, 394 (Type-locality : Bengal)

1981, *Lepidocephalus* (*Lepidocephalichthys*) *guntea*, Tilak and Husain, *Rec. zool. Surv. India, Occ. Paper,* **32** : 7, figs 1-4.

1991. *Lepidocephalus guntea* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, **1** : 525, Fig. 171.

Material examined : 2 exs, Karis, Pong Dam, Dist. Kangra (H.P.), G. Thirumali, 16.x.2000, 6exs, Karis, Pong Dam, Dist. Kangra (H.P.), 16.x.2000, Coll. G. Thirumali and Party.

Diagnostic Characters : Body elongated and slightly compressed, Barbels three pairs and well developed, Dorsal fin inserted near to caudal fin base than to snout-tip, Caudal fin cut square with rounded corners, Black blotch at base of caudal fin, Scales very small.

Distribution : India : Throughout northern States.

Elsewhere : Pakistan, Sri Lanka, Nepal, Bangladesh.

Common Name : Guntea loach

Vernacular name : Jiwal

Subfamily BOTIINAE

●41. ***Botia biridi*** Chaudhari

1909. *Botia birdi* Chaudhuri, Rec. Indian Mus., 3(4) : 339 (Type-Locality : Rupar, Punjab).
1991. *Botia biridi* Chaudhari Talwar and Jhingran, *Inland Fishes,* **1** : 536.

Diagnostic Characters : Body elongated and laterally compressed, Four pair of barbels, Two pair of rostral, One pair maxillary and one pair mandibular, Dorsal fin inserted equidistance between snout tip and base of caudal fin, Caudal fin deeply forked, Scales very small.

Distribution : India : Himachal Pradesh, Jammu and Kashmir, Punjab, Assam and West Bengal.

Status : LRnt

Common Name : Birdi loach

Vernacular name : Loach

Order SILURIFORMES

Family BAGRIDAE

●42. ***Mystus bleekri*** (Day)

1877. *Macrones bleekeri* Day, *Fishes of* India : 451, pl. 101, fig. 1 (Type-Locality : Bengal).
1977. *Mystus bleekeri*, Jayaram, *Rec. zool. Surv. India, Occ. Pap.*, **8** : 29, fig. 21 B.
1991. *Mystus bleekeri* (Day), *Inland Fishes,* **2** : 558, fig. 183.

Diagnostic Characters : Body elongated and compressed, Head depressed, Barbels four pairs, Maxillary barbels extends up to anal fin, Dorsal spine smooth, Adipose fin large and inserted just behind dorsal fin, No dark spot at base of dorsal fin, Caudal fin forked, body with two longitudinal bands, One above and other below lateral line, Scales absent.

Distribution : India : All north India states.

Elsewhere : Bangladesh, Nepal, Myanmar, Sumtra.

Status : CAMP : VU

Common Name : Day's mystus

Vernacular name : Kinger

43. ***Aorichthys aor*** (Hamilton-Buchanan)

1822. *Pimelodus aor* Hamilton-Buchanan, *Fishes of Ganges*; 205, 379. pl. 20, fig. 68 (Type-Locality : Rivers of Bengal and upper part of Gangatiç estuary).

1976. *Mystus (Aorichthys) aor*, Misra, Fauna of India, Pisces (2nd ed.), **3** : 74.

1991. *Aorichthys aor* (Hamilton- Bichanan), *Inland Fishes*, **2** : 547, fig. 178.

Material examined : 2 ex observed at Sansarpur Terrace, coll. Indu Sharma & party, Pong Dam, 14.iii.2006.

Diagnostic Characters : Body elongated and compressed, Snout broad and rounded, Barbles four pairs, Maxillary barbles extends to base of caudal fin, Dorsal fin serrated, Adipose fin long, Caudal fin ray 17, Scales absent.

Distribution : India : Throughout Indian Subcontinent.

Elsewhere : Pakistan, Nepal, Bangladesh, Myanmar.

Common Name : Long-whisked catfish

Vernacular name : Seenghara

44. ***Aorichthys seenghala*** (Sykes)

1841. *Platystoma senghala* Sykes, *Trans Zool. Soc. Lond.*, **2** : 371, Pl 65, Fig. 2 (Type-Locality : Mulla Motha river at Poona).

1976. *Mystus (Aorichthys) seenghala*, Misra, *Fauna of India*, Pisces (2nd ed.), **3** : 79, fig. 16.

1991. *Aorichthys seenghala* (Sykes), Talwar and Jhingran *Inland Fishes*, **2** : 548.

Material examined : 5 ex observed at Sansarpur Terrace, coll. Indu Sharma & party, Pong Dam, 14.iii.2006.

Diagnostic Characters : Body elongated and compressed, Snout broad and spatulate, Four pair of barbles, Maxillary barbles extends up to pelvic fin, Dorsal spine serrated, Adipose fin base short; Caudal fin have 19-21rays, Scales absent.

Distribution : India : Throughout Indian subcontinent.

Elsewhere : Afghanistan, Pakistan, Nepal, Bangaladesh.

Common Name : Seenghari

Vernacular name : Seenghara

Family SILURIDAE

45. *Wallago attu* (Schneider)

1801. *Silurus attu* Schneider *Syst. Ichth* : 378, pl. 75 (Type-Locality : Malabar).

1877. *Wallagu attu*, Day, Fishes of India : 479, pl. 111, fig. 4.

1991, *Wallago attu* (Schneider), Talwar and Jhingran *Inland Fishes*, **2** : 590.

Material examined : 2 exs observed at Sansarpur Terrace, coll. Indu Sharma & party, Pong Dam, 13.iii.2006.

Diagnostic Characters : Body elongated and compressed, Gap of mouth reaches beyond eyes, Barbles two pairs, Maxillary barbles extends beyond origin of anal fin, Mandibular barbles short, Dorsal fin inserted before to pelvic fin, Dorsal fin short, Caudal fin deeply forked and its upper lobe longer, scales absent.

Distribution : India : Throughout Indian Subcontinent.

Elsewhere : Sri Lanka, Nepal, Bangladesh, Myanmar, Thailand, Vietnam, Sumutra and Java.

Status : CAMP : LRnt

Common Name : Boal

Vernacular name : Mallee

Family AMBLYCIPITIDAE

●46. *Amblyceps mangois* (Hamilton-Buchanan)

1822, *Pimelodus mangois* Hamilton-Buchanan, Fishes of Ganges : 199, 379 (Type-Locality : Northern Bihar).

1877. *Amblyceps mangois*, Day, Fishes of India : 490, pl. 102, fig. 6.

1991. *Amblyceps mangois* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, **1** : 615.

Diagnostic Characters : Body elongated, Head broad and depressed, Mouth wide, Barbles four pairs, Dorsal and pectoral gin concealed, Caudal fin truncate, Scales absent.

Distribution : India : Himachal Pradesh, Punjab, Uttar Pradesh, Meghalaya, Manipur and West Bengal.

Elsewhere : Pakistan.

Status : CAMP : LRnt

Common Name : Indian torrent catfish

Vernacular name : Sudaal

Family SISORIDAE

•47. *Bagarius bagarius* (Hamilton-Buchanan)

1822. *Pimelodus bagarius*, Hamilton-Buchanan, *Fishes of Ganges* : 186, 378, pl. 7, fig. 62 (Type-*Locality* : Ganga river and its tributaries).

1939. *Bagarius bagarius*, Hora (partin), *J. Bombay nat. Hist. Soc.*, **40**(4) : 583.

1991. *Bagarius bagarius* (Hamilton-Buchanan), Talwalr and Jhingran *Inland Fishes*, **2** : 622.

Diagnostic Characters : Body elongated, Head depressed, Eyes small and covered with skin, Four pair of barbels, Dorsal fin inserted near to adipose fin than to snout tip.

Distribution : India : Throughout Indian Subcontinent.

Elsewhere : Chao Phrya and Mekong basins.

Status : CAMP : VU

Common Name : Freshwater Shark

Vernacular name : Gooch

•48. *Glyptothorax conirostrae conirostrae* (Steindachner)

1867. *Glyptosternum conirostre* Steindachner, *Sitzber, Acad. Wiss. Wien*, **55**(1) : 532, pl. 5, fig. 2, (Type-*Locality* : Shimla).

1976. *Glyptothorax conirostrae conirostrae*, *Fauna of India*, Pisces (2nd ed.), **3** : 262.

1991. *Glyptothorax conirostrae conirostrae* (Steindachner), Talwalr and Jhingran *Inland Fishes*, 2 : 651.

Diagnostic Characters : Body elongated, Head greatly depressed, head much longer than broad, Four pair of barbles, Maxillary barbles extend up to pectoral fin, Adhesive thoracic apparatus longer than broad and without a central pit, Dorsal fin inserted midway between adipose fin and snout tip, Dorsal spine weak and smooth, Caudal fin forked, Skin on head and body smooth.

Distribution : India : Himachal-Pradesh, Jammu and Kashmir

Elsewhere : China

Vernacular name : Mochi, Kinger

•49. *Glyptothorax garhwali* Tilak

1969. *Glyptothorax garhwali* Tilak, *J. Inland Fish. Soc. India*, **1** : 37, figs 1-7 (Type-Locality : Alkanda river nr. Srinagar, Garhwal dist., Uttar Pradesh).

1991. *Glyptothorax garhwali* Tilak, Talwar and Jhingran, *Inland Fishes*, **2** : 652.

Diagnostic Characters : Body elongated, Head depressed, head longer than broad, four pair of barbles, Maxillary barbles extends beyond base of pectoral fin, Adhesive thoracic apparatus longer than broad, Adhesive apparatus incomplete posteriorly, Deep central pit present, Dorsal fin inserted near to adipose fin than to tip of snout, Dorsal spine strong and smooth, Caudal fin forked, Skin on body and head smooth.

Distribution : India : Himachal Pradesh and Uttrakhand.

Status : CAMP: CR

Vernacular name : Kinger

50. *Glyptothorax pectinopterus* (McClelland)

1842. *Glyptosternon pectinopterus* (McClelland), *Calcutta.J.nat. Hist.*, **2** : 587 (Type-Locality : Shimla).

1976. *Glyptothorax pectinopterus*, Misra, *Fauna of India*, Pisces (2nd ed.), **3** : 272, pl. 11, figs 9 &10.

1991. *Glyptothorax pectinopterus* (McClelland) Talwar and Jhingran *Inland Fishes*, **2** : 65ι.

Material examined : 1 ex, Jawali, Pong Dam Wetland, Dist. Kangra (H.P.), 15.iii.2006, Coll. Indu Sharma and Party.

Diagnostic Characters : Body elongated, Head greatly depressed, Four pair of barbles, Maxillary barbles reaches up to middle of pectoral fin, Adhesive thoracic apparatus as long as broad, central pit absent, Dorsal fin inserted near to adipose fin than snout –tip, Caudal fin forked, Skin on head and body granulated.

Distribution : India : Himachal Pradesh, Jammu and Kashmir, Uttar Pradesh.

Elsewhere : Pakistan and Nepal.

Status : CAMP : LRnt

Vernacular name : Kinger

●51. *Glyptothorax stoliczkea* (Steindachner)

1867. *Glyptosternum stoliczkae* Steindachner, *Sitzber. Acad. Wiss. Wien.*, **55**(1) : 533, pl. 5, fig. 1 and pl. 6, Fig. 1 (Type-locality : Shimla).

1976. *Glyptothorax stoliczkae*, *Fauna of India*, Misra, Pisces (2nd ed.), **3** : 279.

1991, *Glyptothorax stoliczkae* Steindachner, Talwar and Jhingran, *Inland Fishes*, **2** : 662.

Diagnostic Characters : Body elongated, Head greatly depressed, four pair of barbles, Maxillary barbles extends beyond middle of pectoral fin, Adhesive thoracic apparatus longer than broad, Central pit absent, Dorsal fin inserted near to adipose fin than to tip of snout, Dorsal spine weak and smooth, Caudal fin deeply forked, Skin on body and head smooth.

Distribution : India : Himachal Pradesh.

Elsewhere : Western Himalaya.

Status : CAMP : CR

Vernacular name : Mochi, Khagga.

Order BELONIFORMES

Family BELONIDAE

52. *Xenentodon cancila* (Hamilton-Buchanan)

1822. *Esox cancila* Hamilton-Buchanan, *Fishes of Ganges* : 213, 380, pl. 27, fig. 70 (Type-Locality Gangetic provinces).

1877. *Belone cancila*, Day, *Fishes of India* : 511, pl. 118, fig. 5.

1991. *Xenentodon cancila* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, **2** : 743.

Material examined : 2exs observed at Sansarpur Terrace by authors, Pong Dam, 13.iii.2006.

Diagnostic Characters : Body very elongated and slightly compressed, Dorsal fin inserted anterior to pelvic fin, Caudal fin truncate, Scales very small.

Distribution : India : Throughout Indian Subcontinent.

Elsewhere : Pakistan, Bangladesh, Sri Lanka, Myanmar, Thailand.

Status : CAMP : LRnt

Common Name : Freshwater garfish

Vernacular name : Kokila

Family GOBIIDAE

*53. *Glossogobius giurius* (Hamilton-Buchanan)

1822. *Gobius giuris* Hamilton-Buchanan, *Fishes of Ganges* : 51, pl. 33, fig. 15 (Type-Locality : Gangetic provinces).

1941. *Glossogoobius giuris*, Koumans, Mem. *Indian Mus.*, **13**(3) : 256 (Rediscription).

1991. *Glossogobius giurius* (Hamilton-Buchanan).Talwar and Jhingran, *Inland Fishes*, **2** : 936, Fig. 274.

Material examined : 1 ex, Bangali, 6 km from Haripur, Pong Dam, Kangra (H.P.), 30.i.2001, Coll. L.P. Dubey and Party, 3exs, Baner Khud at Haripur, dist. Kangra (H.P.),31.i.2001, Coll. L.P. Dubey and Party.

Diagnostic Characters : Body elongated and slightly compressed, Head depressed, Snout elongated, Eyes very small, Maxilla extends up to half of eye, Scales ctenoid.

Distribution : India : Himachal Pradesh.

Elsewhere : Inhabits primarily freshwater and estuaries and also the sea.

Status : CAMP : LRnt

Common Name : Tank goby

Order CHANNIFORMES

Family CHANNIDAE

●54. *Channa marulius* (Hamilton-Buchanan)

1822, *Ophiocephalus marulius* Hamilton-Buchanan, *Fishes of Ganges* : 65, 367, pl. 17, fig. 19 (Type-Locality : Gangetic provinces).

1945, *Channa marulius ara* Deraniyagala, Spolia Zeyl., **24** : 93, pl. 24 (type-Locality : Ceylon).

1991, *Channa marulius* (Hamilton-Buchanan) Talwar and Jhingran, *Inland Fishes*, **2** : 1017.

Diagnostic Characters : Body elongated and abdomen rounded, Head depressed with plate like scales, pectoral fin about half head length, Pelvic fin about 75% of pectoral fin length, a black blotch on base of caudal fin, caudal fin rounded.

Distribution : India: Himachal Pradesh, Jammu and Kashmir, West Bengal, Karnataka, Kerala, Gujarat, Uttar Pradesh and Delhi.

Elsewhere : Pakistan, Sri Lanka, Bangladesh, Nepal, Myanmar, Thailand and China.

Status : CAMP : LRnt

Common name : Giant snakehead

●55. *Channa punctatus* (Bloch)

1793. *Ophiocephalus punctatus* Bloch, *Naturges, ausland. Fische*, (7) : 139, pl. 358 (Type-Locality : Rivers and lakes of Coromoandel coast).

1991. *Channa punctatus* (Bloch) Talwar and Jhingran, *Inland Fishes*, **2** : 1020, Fig. 290.

Diagnostic Characters : Body elongated, Pectoral fin extends up to anal fin, Predorsal scales 12, Scales on top of head large, Pelvic fin about 75% of pectoral fin length, Caudal fin rounded.

Distribution : India : Throughout Indian subcontinent.

Elsewhere : Pakistan, SAfghanistan, Sri lanka, Nepal, Bangladesh, Myanmar and China.

Status : CAMP : LRnt

Common Name : Spotted snakehead

56. *Channa striatus* (Bloch)

1793. *Ophiocephalus striatus* Bloch, *Naturges, ausland. Fische*, (7) : 141, pl. 359 (Type-Locality : Malabar).

1991. *Channa striatus* (Bloch) Talwar and Jhingran, *Inland Fishes*, **2** : 1022.

Material examined : 1 ex observed at Sansarpur Terrace, coll. Indu Sharma & party, Pong Dam, 13.iii.2006.

Diagnostic Characters : Body elongated, Subcylindrical anteriorly, Pectoral fin about twice in head length, Predorsal scales 18 to 20, Caudal fin rounded.

Distribution : India : Through out Indian Subcontinent.

Elsewhere : Pakistan, Sri Lanka, Banghaladesh, Nepal, Myanmar, Malay Archipelago, Thailand and South China.

Common Name : Striped or Banded snakehead

Status : CAMP : LRlc

Family MASTACEMBELIDAE

57. ***Mastacembalus armatus*** (Lacepede)

1800. *Macrognathus armatus* Lacepede, *Hist. nat. Poiss*, **2** : 286.

1876. *Mastacembalus armatus*, Fishes of India : 340, pl. 73, fig. 3.

1991. *Mastacembalus armatus* (Hamilton-Buchanan), Talwar and Jhingran, *Inland Fishes*, **2** : 1031.

Material examined : 2 exs, Dehar Khud, 20 km from Nagrota Surian, Pong Dam Wetland, Dist. Kangra (H.P.), 19.v.2007, Coll. Indu Sharma and Party.

Diagnostic Characters : Body slender, Preorbital spine strong, Mouth small, Spinous dorsal fin, Doral and anal fin joined to caudal fin, caudal finrays 14 to 17.

Distribution : India : Through out Indian Subcontinent.

Elsewhere : Pakistan, Sri Lanka, Nepal, Myanmar, Southern China.

Common Name : Tire-track spiny eel

Vernacular name : Godh, Baam.

12 fish species marked with (*) recorded for the first time from the Reservoir. Species marked with (●) incorporated from the literature.

REFERENCES

Anon. 1998. BCPP CAMP Workshop on Freshwater fishes of India. Organised and hosted by the National Bureau of Fish Genetic Resources, Lucknow, 22-26 September.

Dhanze, R. and Dhanze, J.R. 2004. Fish diversity of Himachal Pradesh, Pp. 39-60. In : *Fish diversity in protected habitats*, (ed. Ayyappan, S, Malik, D.S., Dhanze, R. and Chauhan, R.S.), Publication, Muzaffarnagar, (U.P.), India.

Jayaram, K.C. 2004. *The Fresh Water Fishes of the Indian Region*, 550pp

Negi, R.K. and Johal, M.S. 2005. Ichthyo-Faunal diversity of Pong Dam Reservoir in Himachal Pradesh, India, *Him. J. Env. Zool.*, **19**(2) : 219-222.

Menon, A.G,K. 1987. *Fauna of India and the adjacent countries.* Pisces, 4(Part-I). Homalopteridae. Calcutta. X + 259pp, Director Zoological Survey of India, Calcutta.

Mehta, H.S. and Uniyal, D.P. 2005. Pisces, In : *Fauna of Western Himalaya* (Part-2) : 255-268, Zoological Survey of India, Kolkata.

Tilak, Raj and Husain, Akhlaq. 1977. A Check-list of the fishes of Himachal Pradesh. *Zool. Jb. Syst. Bd.* **104** : 265-301.

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, **12** : 93-97, 2009

AMPHIBIA

H.S. MEHTA and INDU SHARMA
Zoological Survey of India, High Altitude Zoology Field Station, Solan–173 212

INTRODUCTION

The state of Himachal Pradesh located in the western Himalayas ranging from lesser, middle, greater and trans Himalayas with diverse ecological and topography. The amphibians in the state of Himachal Pradesh are represented by frogs and toads by 17 species belonging to four families (Mehta, 2005) *viz.* Ranidae, Bufonidae, Rhacophoridae and Microhylidae. The present study enumerates 8 species, representing 7 genera belonging to three families collected from various ecological niches like water bodies, ditches, pools, bushes and thick forests.

The nomenclature followed here is after Frost (2006) except for Bufo species.

SYSTEMATIC ACCOUNT

1. Family BUFONIDAE

1. *Bufo melanostictus* Schneider 1799

Common Indian toad

1799. *Bufo melanostictus* Schneider, *Hist. Amph. J.* Iena : 216.

Material examined : 2exs observed at Sansarpur Terrace by authors, Pong Dam, 13.iii.2006.

Diagnosis:. Pale yellow to brownish toad; head broader than long with bony cornifed black ridges; snout pointed, shorter than ocular diameter, nostrils at tip of snout; eyes large, interorbital width more than height of upper eyelid; tympanum large and circular; paratoid glands long, kidney-shaped; toes nearly two-third webbed; premaxillaries overlapped by nasals; suprascapula equals scapula in width; clavicles rod-like and held almost at an angle of 40 degree.

Distribution : Ranges from Sri Lanka to Southern China, and down through Thailand, West Malaysia and Singapore western Indonesia and the island of Borneo.

Remarks : One of the commonest of true toads in Southeast Asia, it occurs in a variety of habitats in both rural and urban areas. At night it can easily be found on grass lawns, and on paths and roads. Concretized drains are also a favored habitat, and the species can withstand brackish water.

2. ***Bufo stomaticus*** Lutken 1864

Indus Valley toad

1864. *Bufo stomaticus* Lutken, ***Vidensk.Medd.*** *Naturhist. Foren.*, Ser. **2, 4** : 305.

1871. *Bufo andersonii*, Boulenger, *Ann. Mag. nat. Hist.* Ser, **12**(5) xii : 163

Material examined : 8ex, Jawali, Pong Dam Wetland, Dist. Kangra (H.P.), 15.03.2006, Coll. Indu Sharma.

Diagnosis : Dirty white to grayish toad; a whitish tubercle at the angles on lower and upper jaws; bony ridges on head absent, head slightly wider than long; snout obtusely pointed, nostrils nearer the anterior part of snout; eyes large, and prominent, interorbital width narrow; tympanum large and circular; first finger longer than second; hind limbs short, tarsal fold absent, ties two-third webbed; premaxillaries slightly overlapped by nasals; clavicles held almost at an angle of 30 degree each.

Distribution : This species is widely distributed in India.

Elsewhere : Pakistan, Nepal and Bangladesh.

2. Family MICROHYLIDAE

3. ***Microhyla ornata*** Dumm. & Bibron, 1821

Narrow mouthed Toad

1841. *Engystoma ornatum*, Dummeril & Bibron, *Erpet. Genl.*, **VIII** : 745

Material examined : 6 exs observed at Nagrota Surian landing centre, Pong Dam, 14.iii.2007.

Diagnosis: Small-sized frogs; pink with specific black streak dorsally; head slightly broader than long; snout rounded and projecting beyond mouth; nostrils almost at the tip of the snout; eyes large, ocular diameter more than length of snout; tympanum indistinct; first finger smallest; subarticular tubercles of fingers prominent; two metacarpal tubercles well developed; inner metatarsal tubercle prominent; precoracoid not distinct, coracoids thin in the middle and broad distally; metasternum short;xiphisternum knob-like.

Distribution : India.

Elsewhere : Bangladesh; Bhutan; Cambodia; China; Hong Kong; Indonesia; Japan; Lao People's Democratic Republic; Macau; Malaysia; Myanmar; Nepal; Pakistan; Taiwan, Province of China; Thailand; Vietnam, India, Sri Lanka, Northeast Montane Regions, Thai-Lao, Southeast Asian Lowlands, Tenneserim, Sundaland, Sulawesi, Lesser Sunda and Philippines.

5. ***Uperodon systoma*** (Schneider, 1799)
Marbled balloon frog

1799. *Rana systoma*, Hist. *Amph.*, **1** : 144

Material examined : 4 ex, Jawali, Pong Dam Wetland, Dist. Kangra (H.P.), 15.iii.2006, Coll. Indu Sharma.

Diagnosis: Smooth, shiny, toad-like form, head slightly broader than long; snout broadly pointed and shorter than ocular diameter; interorbital width twice the height of upper eyelid; a supratemporal fold from eye to shoulder, bifurcating posteriorly; first finger smaller than second, subarticular tubercles of fingers well developed, subarticular tubercle of toes moderately developed; inner and outer metatarsal tubercles well developed and subarticular tubercles of toes moderately developed; inner and outer metatarsal tubercles well developed and blade-like, outer metatarsaltubercle smaller than inner; suprascapula shorter in width than scapula, scapula broad, long at the supra-scapular articulation; clavicles, omosternum and episternum absent.

Distribution : Southern and Eastern India as far north as the valley of the Ganges and Himachal Pradesh.

Elsewhere : Sri Lanka; presumably in western Bangladesh; reported from the foot of the Shakarparian Hills, Islamabad, Pakistan; reported for 15 km east of Mahendranagar, Nepal.

3. Family RANIDAE

4. ***Euphlyctis cyanophlyctis*** (Schneider, 1799)
Indian Skipper Frog

799. *Rana cyanophlyctis, Hist. Amph,* **1** : 137

2005. *Limnonectes cyanophlyctis, Fauna Punjab Skiwalik*, Punjab State Council for Science & Technology: 699.

Material examined : 8 exs, Baner Khud at Haripur, dist. Kangra (H.P.), 31.i.2001, Coll. L.P. Dubey and Party.

Diagnosis : Dark brown to olive green frog; head as long as wide arrow-shaped; snout obtusely pointed, nostrils equidistant from eyes and the anterior part of snout; eyes large, interorbital width smaller than upper eyelid; tympanum circular, two-third in ocular diameter; first finger nearly equals or smaller in length, finger pointed at tips, subarticular tubercles of the fingers weakly developed; hind limbs long; tips of toes blunt, toes completely webbed, inner metatarsal tubercle digitiform.

Distribution : The species is widely distributed from Arabia to South Asia and South-East Asia.

Remarks : The Indian Skipper frog or Skittering frog (*Euphlyctis cyanophlyctis*) is a common frog found in South Asia. They are slimy and are often seen at the edge of waterbodies with their eyes above the water. They noisily move away from the banks of the waterbodies when disturbed giving them their common name. They are rarely seen outside water.

6. ***Fejervarya syhadrensis*** (Annandale, 1919)
Southern cricket frog

1829. *Rana limnocharis syhadrensis*, Annandale, *Rec. Indian Mus.*, **16** : 123.

2005. *Limnonectes limnocharis Fauna Punjab Shiwalik, Punjab State Council for Science & Technology*: 699

Material examined : 4 exs, Dehar Khud, Near Nagrota Surian, Pong Dam, Kangra (H.P.), Indu Sharma & Party, 19.v.2007, 2 exs, Bangali, 6 km from Haripur, Kangra (H.P.), L.P. Dubey and Party, 30.i.2001.

Diagnosis : Light gray to brownish, small-sized frogs; head as long wide or slightly longer, arrow-shaped; snout obtusely pointed and projecting beyond lower jaw, nostrils nearer the snout; eyes large, equal to length of snout, interorbital width equals height of upper eyelid; tympanum distinct, nearly half in the ocular diameter; a strong supratemporal fold from eye to tympanum and shoulder; first finger longer than second; subarticular tubercles of the fingers prominent; thee metacarpal tubercles at the base of palm; hind limb short; tibia slightly longer than femur; toes half-webbed.

Distribution : Eastern and western India.

Elsewhere : Eastern Pakistan, Bangladesh, and Nepal, at low to moderate elevations.

7. ***Hoplobatrachus tigerinus*** (Daudin, 1802)
Indian Bull Frog

1802. *Rana tigerina, Hist. Rain. Gren Crep.* 64

2005. *Dicroglossus tigerina, Fauna Punjab Shiwalik, Punjab State Council for Science & Technology,* 699

Material examined : 4 exs, Baner Khud at Haripur, dist. Kangra (H.P.), 31.i.2001, Coll. L.P. Dubey and Party.

Diagnosis : Green or brown with yellow or black spots, a yellow vertebral streak from snout to vent; head as long as broad arrow-shaped, one-third in total length; snout long, projecting beyond mouth; nostrils nearer the anterior part of snout than eyes; ocular diameter less than length of snout, inter orbital width narrower than height of upper eyelid; fingers obtuse, subarticular tubercles prominent; tarsal fold distinct, inner metatarsal tubercles well developed; omosternum forked at the base.

Distribution : This species is found throughout most wetland areas of India.

Elsewhere : Bangladesh and much of northern Pakistan, and is recorded from the southern parts of Nepal, and from upper and northern central Myanmar. It has also been reported from Afghanistan.

Remarks : A principally lowland species, it is found at elevations between 25 and 800 m ASL, over much of its range, although it may occur up to 2,000 m ASL in Nepal.

8. *Sphaerotheca breviceps* (Schneider, 1799)
Burrowing Frog

1799. *Rana breviceps* Schneider, *Hist. Amph. Nat.* : 140

2005. *Tomopterna breviceps* Schneider Fauna Punjab Shiwalik, Punjab State Council for Science & Technology, 699

Material examined : 2 exs, Bangali, 6 km from Haripur, Kangra (H.P.), L.P. Dubey and Party, 30.i.2001.

Diagnosis: A toad-like form; dark brown to white in color; head slightly broader than long; snout rounded, nostrils equidistant from eyes and anterior part of snout; ocular diameter equals to length of snout, inter orbital width narrower than height of upper eyelid; tympanum circular, more than half the diameter of the eye; a strong supra temporal fold from eye to shoulder; first finger longer than second and equals third, subarticular tubercles of fingers prominent; inner metatarsal tubercle bladelike.

Distribution : India.

Elsewhere : Bangladesh, Myanmar, Pakistan and Sri Lanka.

Remarks : This burrowing frog inhabits relatively humid parts and is found in abundance along the Himalayan foothills in the northwest. It is essentially nocturnal emerging at dusk from of its burrow, which it excavates, in soft sandy soil with the help of its broad shovel-shaped inner metatarsal tubercle. It is insectivorous, and is often seen devouring centipedes and millipedes, which are common in its habitat.

REFERENCES

Chopra, R.N. 1977. Amphibian Fauna of Corbett National Park (UP) *Newsl. zool. Surv. India*, 3(4) : 215-217.

Frost, Darrel R. 2006. Amphibian Species of the World : an Online Reference. Version 4 (17 August 2006). Electronic Database accessible at [1]. American Museum of Natural History, New York, USA.

Husain A. 1995.mphibia, Himalayan Ecosystem Series. Fauna Western Himalayas, Part-I. Uttar Pradesh, *Zool. Surv. India,* Kolkata : 151-157.

Khanna, V. and Kumar, A. 2005. Faunal Diversity of Corbett Tiger Reserve, Uttarakhand. In : *National Biodiversity Strategy and Action Plan, Shiwalik Eco-region,* : 50-56., *Zool. Surv. India.* : 1-110.

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, **12** : 99-108, 2009

REPTILIA

UTTAM SAIKIA and H.S. MEHTA
Zoological Survey of India, High Altitude Zoology Field Station, Solan–173 212

INTRODUCTION

The class Reptilia encompassing groups like lizards, snakes, crocodiles, tortoises etc. are one of the most varied and fascinating component of vertebrate biodiversity. Reptilian diversity of India is represented by 506 species distributed over 27 families (Das, 2003). However, reptiles remain the least documented vertebrate groups in Himachal Pradesh. The monographic work of Boulenger (1890) reflected many species from the present political boundary of Himachal Pradesh. Thereafter, Prasad (1914) recorded saurian fauna from erstwhile Shimla Hill state. Smith (1935, 1943) in his comprehensive series of reptiles of British India also accounted many species from this part of western Himalaya. Afterwards, a few studies were reported pertaining to geographical (Acharjee and Kripalini, 1951; Mahajan & Agrawal, 1976; Agrawal, 1979) and altitudinal (Waltner, 1975a, 75b, 75c & 75d) distribution of reptile species in the state. Of late, there have been a number of additions to the reptilian inventory of the state and currently it stands at 55 species spread over 15 families (Saikia *et al.*, 2005, Saikia *et al.* in press).

The present paper reports the reptilian diversity of Pong Dam Wetland, a man made wetland in Kangra district and it's immediate surroundings. The inventory presented here is mainly based on the observations of the authors, sighting reports of locals and a small reptilian collection from the area at Zoological Survey of India, Solan and is not meant to be exhaustive. No previous report on reptilian fauna of the area is available although Acharjee & Kripalini (1951) reported some species from the Kangra valley region.

SYSTEMATIC ACCOUNT

Classa REPTILIA

Order SQUAMATA

Suborder SAURIA

1. Family GEKKONIDAE

1. ***Hemidactylus flaviviridis*** Ruppel, 1840

(Yellow-green house gecko)

1835. *Hemidactylus flaviviridis* Ruppell, *Neue Wirb. Faun. Abyss*: p. 18, pl. 6, fig. 2 (type loc. Massauna, Eritrea)

Diagnostic Characters : A large gecko measuring up-to 190 mm in total length. Dorsal coloration may be light or yellowish grey. Typical dorsal pattern consists of five irregularly undulated dark transverse bands. Venter is yellowish. The most important characteristic for identification of this gecko is the tail which is widens remarkably after its narrow base (Kastle, 2002a).

Distribution : The whole of India, but widely distributed in North India above 20°N (Sharma, 2002); in Himachal Pradesh : throughout the state except Trans-Himalaya

Abundance Status : Locally very common, very common in other parts of range (Sharma, 2002).

Conservation Status : CAMP-1997 : LRlc

2. ***Hemidactylus brookii*** Gray, 1845
(Brook's house gecko)

1845. *Hemidactylus brookii* Gray, *Cat. Liz. Brit. Mus.* P. 153 (type loc. Borneo)

Diagnostic Characters : A comparatively smaller gecko that reaches a total length of about 120 mm. Dorsum is brown or light grey with dark spots arranged in an irregular pattern. Dark lines run along the sides of the head, venter white to pink grey. This species can be differentiated from other geckos by the presence of sub-trihedral and strongly keeled dorsal tubercles which are arranged in longitudinal rows (Kastle, 2002b).

Distribution : Whole of India ; in Himachal Pradesh : throughput the state except Trans-Himalaya.

Abundance Status : Very common locally and other parts of the country (Sharma, 2002)

Conservation Status : CAMP-1997 : LRlc

2. Family AGAMIDAE

3. ***Calotes versicolor*** (Daudin, 1802)
(Indian garden lizard)

1802. *Agama versicolor* Daudin, *Hist. Nat. Rept.*, **3** : p. 395, pl. 44 (type loc. India)

1935. *Calotes versicolor*, Smith, *Fauna Brit. Ind.*, **2** : p. 189.

Diagnostic Characters : A large and long tailed lizard with head body length of 120-140 mm and tail length of 300-350mm. Basic colour is light brown, olive or greyish. There is a dorsolateral white streak on each side with dark brown patches above and below it. Body is compressed, head large and males with gular sac. Head scales irregular, juxtaposed and dorsal scales keeled, imbricate with pointed tips. A dorsal crest is present which is more prominent in males (Sharma, 2002).

Distribution : Whole of India; in Himachal Pradesh: throughout the state except Trans-Himalaya.

Abundance Status : most common throughout its range (Sharma, 2002).

Conservation Status : CAMP-1972 : LRnt

4. ***Laudakia tuberculata*** (Hardwicke and Gray, 1827)
(Kashmir rock agama)

1827. *Agama tuberculata* Hardwicke and Gray, *Zool. Journ.* 3 : 218 (type loc. Bengal).

2003. *Laudakia tuberculata*, Das, *J. Bombay Nat. Hist. Soc.*, **100**(1&2) : 461.

Diagnostic Characters : A sturdy agamid with flattened head and body. It reaches a maximum SVL length of 128 mm and tail length is 1.6 to1.9 times the SVL (Minton, 1966). Normal colour is brownish grey to grayish black with whitish dorsal spots although it is extremely variable. Males have typical bluish tinge on the dorsum. Upper head scales are unequal, convex, smooth or keeled. Dorsum with keeled enlarged scales which are as large as ventral scales of the body. Flanks have few enlarged scales. An elongated patch of enlarged scales are present on the belly.

Distribution : Western Himalayas (Kashmir, Uttarakhand, Northern Punjab) ; in Himachal Pradesh : throughout the state including the Trans-Himalayan districts of Lahaul & Spiti and Kinnaur.

Abundance Status : Commonly seen in the area, very common in some parts of range.

Conservation Status : Indeterminate

3. Family SCINCIDAE

5. ***Lygosoma punctatum*** (Gmelin, 1799)
(Spotted supple skink)

1799. *Scincus punctatus* Gmelin, *Hist. Amphib.*, : 197 (Based on Seba's fig. 2, pl. 12, fig. 6).

2002. *Lygosoma punctatum*, Eremchenko, *Amphibians and Reptiles of Nepal* : 748.

Diagnostic Characters : A slim lizard with elongate body and short limbs. Standard body length 85 mm and tail length 92 mm (Sharma, 2002) Dorsum is brown, each scales with a black basal spot. Belly is yellowish white with black dots. Lower eyelid with a semitransparent disc. Supranasals are in contact with each other behind the rostral. Scales smooth with 24-28 rows round the body, 62-76 down the middle of the back. Digits long, fourth toe is longer than the third with 11-14 keeled lamellae beneath it.

Distribution : Whole of India ; in Himachal Pradesh: throughout the state except Trans-Himalaya.

Abundance Status : Very common in all parts of the range (Sharma, 2002)

Conservation Status : Indeterminate

6. ***Eurylepis taeniolatus*** Blyth, 1854
(Yellow-bellied mole skink)

1854. *Eurylepis taeniolatus* Blyth, *J. Asiat. Soc. Beng.*, **23** : 4709 (type loc. Salt. Range, Punjab, Pakistan)

Marterial examined : 1, downstream dam site, Pong wetland, Coll. M. Thakur, 12/IV/99.

Diagnostic Characters : A small lizard reaching a snout to vent length of 45 mm (Smith, 1935). Dorsum is olive brown with two golden lateral stripes, the upper one extending from supraciliary margin to the tail, the lower one extending from upper lip to the base of the hind limb. The space between the stripes is spotted with black, belley yellowish white. The upper head scales are strongly keeled and striated, only single frontonasal is present. 28-35 scales round the middle of the body. A large preanal plate is present.

Distribution : Cutch, Rajasthan, Punjab and Kashmir; in Himachal Pradesh : Sirmour, Kangra.

Abundance Status : Local status uncommon, uncommon in other parts of range (Sharma, 2002).

Conservation Status : CAMP-1997 : DD

4. Family VARANIDAE

7. ***Varanus bengalensis*** (Linnaeus, 1758)
(Bengal monitor)

1758. *Lacerta monitor* Linnaeus, *Syst. Nat. Ed.*, **10** : 201 (type loc. India).

1966. *Varanus bengalensis*, Minton, *Bull. Amer. Mus. Nat. Hist.*, **134** : 112.

Diagnostic Characters : A huge lizard reaching a snout to vent length of 750 mm and a tail length of about 1000 mm (Smith, 1935). Brownish or olive above usually with black dots. Lower parts yellowish, uniform or spotted with black. The head and neck is long with pointed snout. Nostril is like a oblique slit and nearer to the orbit than the tip of the snout unlike other species of the genus. Limbs are long, strong and digits elongate. Tail is compressed laterally with a low double toothed crest of scales above except at the base and tail.

Distribution : Whole of India; in Himachal Pradesh: throughout the state except the Trans-Himalaya.

Abundance Status : Uncommon in the sanctuary. Although commonly seen in most parts of range, however, due to rampant killing for meat and skin has become endangered (Sharma, 2002).

Conservation Status : IWPA : Schedule I, CAMP-1997 : Vu

Suborder SERPENTES

5. Family TYPHLOPIDAE

8. ***Ramphotyphlops braminus*** (Daudin, 1803)
(Brahminy worm snake)

1803. *Eryx braminus* Daudin, *Hist. Nat. Rept.*, **Vii** : 279

1966. *Ramphotyphlops braminus* Robb, *Ann. Mag. Nat. Hist.*, **13**(9) : 675

Diagnostic Characters : A very slender snake resembling an earthworm. The maximum length recorded from India is 162 mm (Wall, 1921). Dorsum is brown, blackish brown or black. Snout, tip of the tail and cloacal area is white. Venter is lighter. Rostral scale is very narrow and connects the prefrontal. The nasals are completely divided. Four supralabials and 3rd and 4th are in contact with the ocular. Body scales are smooth, highly polished and arranged in 20 rows round the body. A triploid parthenogenetic species without male Kabisch (2002).

Material examined : 1, Guglara, Pong Wetland, coll. U. Saikia, 12 / IV / 2006.

Distribution : Whole of India; in Himachal Pradesh : throughout the state except Trans-Himalaya.

Abundance Status : Very common locally. Common in other parts of the range (Sharma, 2002).

Conservation Status : IWPA : Schedule IV

6. Family PYTHONIDAE

9. ***Python molurus molurus*** (Linnaeus, 1758)
(Indian Rock Python)

1758. *Coluber molurus* Linnaeus, *Syst. Nat.* 10th ed. : 225.

1943. *Python molurus molurus* Smith, *Fauna Brit. Ind.* **3** : 108.

Diagnostic Characters : Heaviest of all Indian snakes reaching a maximum length of 7620 mm (Deuve, 1970) although, normal adult length is 3000 mm (Whitaker and Captain 2004). Head is distinct from neck, snout long and rounded. Sensory pits are present on the scales of snout tip and upper lip. Pupil is vertical. Supralabials are in contact with eyes which serve as a distinguishing character from other subspecies ie *P. m. bivittatus* in which these scales are separated from eyes by small suboculars. Dorsum yellowish to brown with asymmetrical dark brown blotches. On the flanks, there are smaller rounded or irregular shaped dark brown spots with light centers.

Distribution : Throughout India except the islands up to 2000 m (Whitaker and Captain, 2004), in Himachal Pradesh : Shiwalik areas of the state.

Abundance Status : Indeterminate, common in parts of range.

Conservation Status : IPWA : Schedule I

7. Family COLUBRIDAE

10. ***Ptyas mucosa*** (Linnaeus, 1758)
(Indian rat snake)

1758. *Coluber mucosas* Linnaeus, *Mus. Ad. Frid.* **i** : 37, pl. 23

2002. *Ptyas mucosa,* Das, *J. Bombay Nat. Hist. Soc.,* **100**(1&2) : 480.

Diagnostic Characters : A large slender snake that reaches a maximum length of 3500 mm (Whitaker and Captain, 2004). Head distinctly broader than neck. Body colour variable from olive, brown, grey or black. Venter is cream coloured or dirty white with dark cross bars. Midbody scale rows 17, 18 or 19 : 17 or 16 : 14 (Whitaker and Captain, 2004), smooth or keeled. Anal scale divided, subcaudals 100-146, paired. Normally 2-3 temporals present.

Distribution : Throughout India; in Himachal Pradesh : throughout the state except Trans-Himalaya.

Abundance Status : Very common, common in all parts of range (Whitaker & Captain, 2004).

Conservation Status : IWPA : Schedule II

11. ***Amphiesma stolatum*** (Linnaeus, 1758)
(Buff-striped keelback)

1758. *Coluber stolatus,* Linnaeus, *Syst. Nat.* 10th Ed. : 219

1960. *Amphiesma stolatum,* Malnate, *Proc. Acad. Nat. Sci. Philadelphia,* **112** : 41-71

Diagnostic Characters : A slender bodied snake with snout to vent length well below 1000 mm. Dorsal colour is brown with two distinct ribbon like yellow stripes from neck to tail. Throat white or yellow, head light brown or olive. Underside white, sometimes with black spots on the scale. Scales in 19:19:17 rows, keeled. Anals usually divided. Internasal truncate but distinctly narrowed anteriorly, supralabials 8, 3rd to 5th touching the eye.

Distribution : All over mainland India (Whitaker and Captain, 2004); in Himachal Pradesh : throughout the state except Trans-Himalaya.

Abundance Status : Common in the wetland and surrounding area and in other parts of range (Whitaker and Captain, 2004).

Conservation Status : IWPA : Schedule IV, CAMP-1997 : LRnt

12. ***Xenochrophis piscator*** (Schneider, 1799)
(Checkered keelback)

1799. *Hydrus piscator* Schneider, *Hist. Amph.,* **i** : 247(type loc. East Indies).

1988. *Xenochrophis piscator,* Malnate & Underwood, *Proc. Acad. Nat. Sci. Philadelphia,* **140**(1) : 59-201

Diagnostic Characters : A fairly robust freshwater snake that hardly exceeds one meter in length, although the maximum recorded length is 1750 mm (Whitaker and Captain, 2003). Body colour is olive green, olive brown, yellowish, brown or black usually with a checkered pattern. Underside glossy or yellowish white. Two bold black streaks, one below and other behind the eye are characteristics of the species. Scales 19 rows at midbody, keeled. Anal scale divided, subcaudals 60-97, paired. Supralabials 9. There is one preocular and three postocular.

Distribution : Throughout India except Kashmir; in Himachal Pradesh : throughout the state except Trans-Himalaya.

Abundance Status : Common both locally and other parts of the range

Conservation Status : IPWA : Schedule II, CAMP-1997 : LRlc

8. Family VIPERIDAE

13. *Daboia russelii* (Shaw, 1797)

Russell's viper

1797. *Coluber russelii* Shaw, *Nat. Misc.* vii, pl 291 (based on Russell, 1796, *Ind. Serp.*, pl. vii and ii, pl. xxiii)

2000. *Daboia russelii* Adler *et al.*, *Hamadryad*, **25**(2) : 83-85

Diagnostic Characters : A stout snake measuring 1000 mm in length (maximum record being 1800 mm) (Whitaker & Captain, 2004). Head is triangular and distinctly broader than neck. Nostril is very large, pupil vertical. Tail thin and short. Brown or yellowish brown with three series of large oval brown or blackish spots. Scale rows in 25-29: 27-33: 21-23, strongly keeled giving it a very rough appearance.

Distribution : Throughout India, in Himachal Pradesh: All through the state except Trans-Himalaya.

Abundance Status : Common throughout range.

Conservation Status : IWPA Schedule II

9. Family ELAPIDAE

14. *Bungarus caeruleus* (Schnieder, 1801)

Common Krait

1801. *Pseudoboa caerulea* Schneider, *Hist. Amphib.* ii, p. 284 (based on Russell)

1943. *Bungarus caeruleus* Smith, *Fauna Brit. Ind.* Iii, p. 413.

Diagnostic Characters : A medium sized snake usually around 1200 mm long, maximum recorded length being 1738 mm (Rimell, 1831). Head is depressed and indistinct from the neck, eyes small and nostrils large. Dorsally black or bluish black with paired linear white cross bars which are more prominent in the forebody. Venter white. 7 supralabials, 3rd and 4th touching the eye. Body scales in 15 rows.

Distribution : Throughout India, In Himachal Pradesh : Solan, Kangra.

Abundance Status : Uncommon in the area, common in other parts of range.

Conservation Status : IWPA : Schedule IV

Order CHELONIA

9. Family TRIONYCHIDAE

15. ***Lissemys punctata andersoni*** Webb, 1980

North Indian Flap-shelled turtle

1980. *Lissemys punctata andersoni* Webb, *Bull Mus. Nat. Hist. Nat. Paris* 4e **2** : 547-557

Diagnostic Characters : A small turtle hardly exceeding a length of 240 mm (Tikader & Sharma, 1997). Carapace and plastron is covered by a soft sheet of skin. Edges of the carapace are soft and flexible. Plastron is with seven paired callosities and soft semicircular flaps accommodating retracted hind foot. Limbs fully webbed, each foot with three claws. Tail very short. Carapace is greenish with many yellow spots with black margin arranged irregularly.

Distribution : Indus, Ganges river system of North India, Sikkim, Brahmaputra drainage in Northeast India. In Himachal Pradesh : Wetlands of Shiwalik area?.

Abundance Status : Indeterminate.

Conservation Status : IWPA : Schedule I

REFERENCES

Acharjee, M.N. & M.B. Kripalini (1951). On a collection of Reptilia and Batrachia from the Kangra and Kullu valleys, Western Himalayas. *Rec. Indian Mus.*, **44** : 175-184

Adler, K., H.M. Smith, S.H. Prince, P. David & D. Chiszar (2000). Russell's viper, *Daboia russelii*, not *Daboia russellii*, due to classical Latin rules. *Hamadryad*, **25**(2) : 83-85

Agrawal, H.P. (1979). A checklist of reptiles of Himachal Pradesh, India. *Indian J. Zootomy*, **20** : 115-124

Blyth, E. (1854). Proceedings of the Society. Report of the curator, Zoological Department. *J. Asiat. Soc. Bengal*, **23** : 737-740

Boulenger, G.A. (1890). The Fauna of British India including Ceylon and Burma. Reptilta and Batrachia. Taylor and Francis, London, 541pp.

Das, I. (2003). Growth of knowledge on the Reptiles of India, with an introduction to Systematics, Taxonomy and Nomenclature. *J. Bombay. nat. Hist. Soc.*, **100**(2&3) : 446-501

Deraniyagla, PE.P. (1960). The taxonomy of the cobras of South eastern Asia. *Spol Zeylan,* **29** : 41-63

Deuve, J. (1970). Les serpents du laos. Mem. O.R.S.T.O.M. Paris, **39** : 251pp

Eremchenko, V. (2002). *Lygosoma punctatum* (Gmelin, 1799) Pp. 748-751. In : Amphibians and Reptiles of Nepal. Biology, systematics, field guide (Eds. Schleich, H. & W. Kastle). Koeltz Scientific Books, Koenigstein. 1201 pp.

Gray, J.E. (1846). Description of some new species of Indian lizard. *Ann. Mag. Nat. Hist.*, **28** : 429-430

Hardwicke, T. and Gray, J.E. 1827. A synopsis of the species of saurian reptiles, collected in India by major-general Hardwicke. *Zool. Jour.*, **3** : 213-229

Kastle, W. (2000a). *Hemidactylus brookii* Gray, 1845. Pp 701-706. In : Amphibians and Reptiles of Nepal. Biology, systematics, field guide. (Eds. Schleish, S. & W. Kastle) Koletz Scientif Book, Koenigstein, 1201pp.

Kastle, W. (2000b). *Hemidactylus flaviviridis* Rupell, 1835. Pp. 706-711. *In*: Amphibians and Reptiles of Nepal. Biology, systematics, field guide. (Eds. Schleish, S. & W. Kastle) Koletz Scientif Book, Koenigstein, 1201pp.

Linnaeus, C. (1857). *Systema Nature* Editio decima reformata Stockholm, Vol. I, iv+823pp

Mahajan, K. K. & Agrawal, H.P. (1976). Reports on a collection of reptile fauna from Shimla hills, Himachal Pradesh. *Rec. zool. Surv. India*, **71**(1-4) : 301-312.

Malnate, E.V. (1960). Systematic division and evolution of the colubrid snake genus *Natrix* with comments on the subfamily Natricinae. *Proc. Acad. Nat. sci. Philadelphia*, **112** : 41-71.

Malnate, E.V & G. Underwood (1988). Australasian natricine snakes of the genus *Tropidonophis. Proc. Acad. Nat. sci. Philadelphia,* **140**(1) : 59-201.

Minton, S.A. (1966). A contribution to the herpetology of West Pakistan. *Bull. Amer. Mus. Nat. Hist.*, New York, **134**(2) : 27-184.

Saikia, U, R.M. Sharma and D.K. Sharma (**2005**). Record of the Leith's sand snake from Himachal Pradesh. *Bionotes*, **7**(2) : 53.

Saikia, U., D.K. Sharma and R.M. Sharma (in press). Checklist of the reptilian fauna of Himachal Pradesh, India. *Reptile-Rap.*

Saikia, U., R.M. Sharma and D.K. Sharma (in press). New records of lizards from Himachal Pradesh. *Herpinstance.*

Saikia, U., D.K. Sharma and H.S. Mehta (in press). First record of large worm snake (*Typhlops diardii* Schlegel, 1839) in Himachal Pradesh. *The Indian Forester.*

Saikia, U., H.S.Mehta and D.K. Sharma (in press). New distributional record of Eastern Black Turtle (*Melanochelys trijuga indopeninsularis*) from Simbalwara Wildlife Sanctuary, Himachal Pradesh. *The Indian Forester.*

Schleich, H.H. and W. Kastle (2002). *Pangshura smithii smithii* (Gray, 1863) : 536-539. *In* : Amphibians and Reptiles of Nepal. Biology, systematics, field guide. (Eds. Schleish, S. & W. Kastle) Koletz Scientif Book, Koenigstein, 1201pp.

Sharma, R.C. (2002). The Fauna of India and the adjacent countries-Reptilia (Sauria) Vol. III. Zoological Survey of India, Kolkata, 430pp.

Smith, M. (1935). The Fauna of British India including Ceylon, Burma. Reptilia and Amphibia. Vol. 2. Sauria. Taylor and Francis, London, 583pp.

Smith, M. (1943). The Fauna of British India including the whole of the Indo-chinese region. Vol III. Serpents. Taylor and Francis, London.

Stoliczka, F. (1871). Notes on new or little known Indian Lizards. *Proc. Asiat. Soc. Bengal* : 192-195.

Stoliczka, F. (1872). Notes on some new species of Reptilia and Amphibia collected by Dr. W. Waagen in North-western Punjab. *Proc. Asiat. Soc. Bengal* : 124-131.

Tikader, B.K. and R.C. Sharma (1997). Handbook, Indian Testudines. Zoological Survey of India, Kolkata : 156pp.

Wall, F. (1921). *Ophidia Taprobanica, or the Snakes of Ceylon,* xxii+581pp.

Waltner, R.C. (1975a). Geographical and altitudinal distribution of amphibians and reptiles in the Himalayas. Part I. *Cheetal,* **16** : 17-25.

Waltner, R.C. (1975b). Geographical and altitudinal distribution of amphibians and reptiles in the Himalayas. Part II. *Cheetal,* **16** : 28-36.

Waltner, R.C. (1975c). Geographical and altitudinal distribution of amphibians and reptiles in the Himalayas. Part III. *Cheetal,* **16** : 14-19.

Waltner, R.C. (1975d). Geographical and altitudinal distribution of amphibians and reptiles in the Himalayas. Part IV. *Cheetal,* **16** : 12-17.

Webb, R.G. (1980). The identity of *Testudo punctata* Lacepede, 1788 (Testudines, Trionychidae) *Bull. Mus. Nat. Hist. Nat. Paris,* 4e **2** : 547-557

Whitaker, R. and A. Captain (2004). *Snakes of India, The Field Guide.* Draco Books, Chengalpattu, 481pp.

Zool. Surv. India
Faunal Diversity of Pong Dam, Wetland Ecosystem Series, **12** : 109-138, 2009

AVES

R. PALIWAL and H.S. MEHTA
Zoological Survey of India, High Altitude Zoology Field Station, Solan–173 212

INTRODUCTION

The Pong Dam Lake in the Himalayan foothills has mighty Dhauladhar range in its backdrop and experiences severe cold during winters and scorching hot summers. Temperature ranges from 5.6° C to 44.3° C. Mean annual rainfall is 1780 mm. The shoreline of the main wetland area does not support much of the emergent vegetation due to obvious seasonal changes in the water level. However, some submerged aquatic vegetation is seen in the reservoir. Out flow from the dam supports extensive swamp with reed beds, grasslands, and submerged hydrophytes in the Shahnahar reservoir. The surrounding hillsides have mixed deciduous and chir pine *Pinus roxburghii* forest.

REVIEW OF LITERATURE

Pandey (1989a) has explored avian diversity of Pong Dam Wetland. He published a comprehensive list of 216 species of birds of Pong dam Lake Bird Sanctuary. He further added 3 species to the list (Pandey, 1989b). Studies on changes in the waterbird diversity due to construction of Pong dam reservoir was studied by Pandey (1993) and revealed the occurrence of another 5 species in the wetland totalling a list of 224 species of birds to his credit. A significantly high wintering population of Bar-headed Goose, *Anser indicus* has been reported to visit Pong Dam Wetland (Tak *et al.*, 2003). The book 'Birds of Kangra' brought out by Besten (2004) provides an exhaustive list of 397 species of the birds of Pong Wetland.

STUDY AREA

The annual fluctuation of water level in the reservoir varies from 433 m during rainy season to 384 m during summer with maximum amplitude of 49 m. A vast area (more than two third) of the reservoir is exposed during summer due to receded water level. Major streams, namely, Ava, Moul, Gaj, Baner, Dehar and Dehri drains into the reservoir. Two major islands viz., Ransar and Karu are present in the lake. The following major avian habitats have formed in the wetland area.

i. Open deep water;
ii. Shallow water on the edge of reservoir;
iii. Dry sand banks;
iv. Mudflats and mudspits;
v. Marshes and shore vegetation below the discharge/spillway of reservoir;
vi. Shrubs and trees.

METHODS

Random observations of the birds were conducted from April 1997 to January 2001. In all, 68 field days were utilized and an average of 5 hours per day was spent in the field. The observations were made to cover all possible habitats and areas of the wetland.

REFERENCES

Alfred, J.R.B. and Nandi, N.C. 2000. Faunal Diversity in Indian Wetlands. *ENVIS Newsl.*, **6**(2) : 1-3.

Besten, den J.W. 2004. *Birds of Kangra*, 173 pp. Moonpeak Publishers, Dharamsala, Himachal Pradesh, India.

Gopal, B. 1995. *Handbook of Wetland Management.* World Wide fund for Nature-India, 307 pp.

IUCN. 1989. In Scott, D.A. (ed.) *A Directory of Asian Wetlands.* IUCN, Gland and Cambridge.

Kumar, A., Sati, J.P., Tak, P.C. and Alfred, J.R.B. 2005. *Handbook on Indian Wetland Birds and their Conservation*: i-xxvi; 1-468 pp. Zoological Survey of India, Kolkata.

Mahabal, Anil. 2005. Aves : 275-339. In *Fauna of Western Himalaya (Part-2), Himachal Pradesh,* 1-359 + 16 plates. Zoological Survey of India, Kolkata,

Mahabal, Anil. and Sharma, T.R. 1992. Distribution pattern of birds of Kangra Valley (Himachal Pradesh). *Him. J. Env. Zool.*, **6** : 85-96.

Mitsch, W.J. and Gosselink, J.G. 1986. *Wetlands*, 2nd edition. Van Nostrand-Reinhold, New York.

Nandi, N.C. and Alfred, J.R.B. 2003. Appendix: freshwater Ecosystems of India : 141-170. In Venkataraman, K. (coordinator) *Natural Aquatic Ecosystems of India, Thematic Biodiversity Strategy and Action Plan, The National Biodiversity Strategy and Action Plan, India,* 1-275. Zoological Survey of India, Chennai.

Pandey, S. 1989a. The birds of Pong Dam Lake Bird Sanctuary. *Tiger Paper*, **16**(2) : 20-26.

Pandey, S. 1989b. The Pong Dam Lake Bird Sanctuary, Himachal Pradesh. *Newsl. Birdwatchers*, **29**(7&8) : 3-4.

Pandey, S. 1993. Changes in waterbird diversity due to the construction of Pong Dam Reservoir, Himachal Pradesh, India. *Biological Conservation*, **66**(2) : 125-130.

Prasad, S.N., Ramachandra, T.V., Ahalya, N., Sengupta, T., Kumar Alok, Tiwari, A.K., Vijayan, V.S. and Vijayan, L. 2002. Conservation of Wetlands of India–a review. *Tropical Ecology*, **43**(1) : 173-186.

Tak, P.C., Paliwal, R. and Sharma, R.M. 2003. Occurrence of huge wintering population of Bar-headed Goose, *Anser indicus*, at Pong Dam Wetland, Himachal Pradesh. *Bionotes*, **5**(4) : 88.

Sl. No.	HBI No.	Systematic List
		I. Order PODICIPEDIFORMES
		1. Family PODICIPEDIDAE
1.	5	*Tachybaptus ruficollis* (Pallas, 1764) Little Grebe
*2.	4a	*Podiceps griseigena* (Boddaert, 1783) Red-necked Grebe
3.	3	*Podiceps cristatus* (Linnaeus, 1758) Great Crested Grebe
4.	N	*Podiceps auritus* (Linnaeus, 1758) Horned Grebe
5.	4	*Podiceps nigricollis* Brehm, 1831 Black-necked Grebe
		II. Order PELECANIFORMES
		2. Family PELECANIDAE
*6.	22	*Pelecanus crispus* Bruch, 1832 * Dalmatian Pelican
		3. Family PHALACROCORACIDAE
7.	28	*Phalacrocorax niger* (Vieillot, 1817) Little Cormorant
8.	27	*Phalacrocorax fuscicollis* Stephens, 1826 Indian Shag
9.	26	*Phalacrocorax carbo* (Linnaeus, 1758) Great Cormorant
		4. Family ANHINGIDAE
*10.	29	*Anhinga melanogaster* Pennant, 1769 Darter
		III. Order CICONIFORMRS
		5. Family ARDEIDAE
11.	49	*Egretta garzetta* (Linnaeus, 1766) Little Egret
12.	35-36	*Ardea cinerea* Linnaeus, 1758 Grey Heron
13.	37-37a	*Ardea purpurea* Linnaeus, 1766 Purple Heron

Sl. No.	HBI No.	Systematic List
14.	45-46	*Casmerodius albus* (Linnaeus, 1758) Large Egret
15.	47,48	*Mesophoyx intermedia* (Wagler, 1829) Median Egret
16.	44	*Bubulcus ibis* (Linnaeus, 1758) Cattle Egret
17.	42-42a	*Ardeola grayii* (Sykes, 1832) Indian Pond-Heron
18.	52	*Nycticorax nycticorax* (Linnaeus, 1758) Black-crowned Night-Heron
19.	57	*Ixobrychus sinensis* (Gmelin, 1789) Yellow Bittern
20.	56	*Ixobrychus cinnamomeus* (Gmelin, 1789) Chestnut Bittern
21.	58	*Dupetor flavicollis* (Latham, 1790) Black Bittern
		6. Family CICONIDAE
22.	60	*Mycteria leucocephala* (Pennant, 1769) Painted Stork
23.	61	*Anastomus oscitans* (Boddaert, 1783) Asian Openbill-Stork
24.	65	*Ciconia nigra* (Linnaeus, 1758) Black Stork
25.	62	*Ciconia episcopus* (Boddaert, 1783) White-necked Stork
		7. Family THRESKIORNITHIDAE
26.	72	*Platalea leucorodia* Linnaeus, 1758 Eurasian Spoonbill
		IV. Order ANSERIFORMES
		8. Family ANATIDAE
27.	88	*Dendrocygna javanica* (Horsfield, 1821) Lesser Whistling-Duck
28.	79	*Anser albifrons* (Scopoli, 1769) Greater White-fronted Goose

Sl. No.	HBI No.	Systematic List
29.	81	*Anser anser* (Linnaeus, 1758) Greylag Goose
30.	82	*Anser indicus* (Latham, 1790) Bar-headed Goose
31.	90	*Tadorna ferruginea* (Pallas, 1764) Brahminy Shelduck
32.	91	*Tadorna tadorna* (Linnaeus, 1758) Common Shelduck
33.	101	*Anas strepera* Linnaeus, 1758 Gadwall
34.	103	*Anas penelope* Linnaeus, 1758 Eurasian Wigeon
35.	100	*Anas platyrhynchos* Linnaeus, 1758 Mallard
36.	97-99	*Anas poecilorhyncha* J.R. Forester, 1781 Spot-billed Duck
37.	105	*Anas clypeata* Linnaeus, 1758 Northern Shoveller
38.	93	*Anas acuta* Linnaeus, 1758 Northern Pintail
39.	104	*Anas querquedula* Linnaeus, 1758 Garganey
40.	94	*Anas crecca* Linnaeus, 1758 Common Teal
41.	107	*Rhodonessa rufina* (Pallas, 1773) Red-crested Pochard
42.	108	*Aythya ferina* (Linnaeus, 1758) Common Pochard
43.	109	*Aythya nyroca* (Guldenstadt, 1770) Ferruginous Pochard
44.	111	*Aythya fuligula* (Linnaeus, 1758) Tufted Pochard
45.	112	*Aythya marila* (Linnaeus, 1761) Greater Scaup
46.	120-121	*Mergus merganser* Linnaeus, 1758 Common Merganser

Sl. No.	HBI No.	Systematic List
		V. Order FALCONIFORMES
		9. Family ACCIPITRIDAE
47.	129-130	*Pernis ptilorhynchus* (Temminck, 1821) Oriental Honey-Buzzard
48.	124	*Elanus caeruleus* (Desfontaines, 1789) Black-shouldered Kite
49.	132-134	*Milvus migrans* (Boddaert, 1783) Black Kite
*50.	135	*Haliastur indus* (Boddaert, 1783) Brahminy Kite
51.	174	*Haliaeetus leucoryphus* (Pallas, 1771) Pallas's Fish-Eagle
52.	172a	*Haliaeetus albicilla* Linnaeus, 1758 White-tailed Sea-Eagle
53.	186-187	*Neophron percnopterus* (Linnaeus, 1758) Egyptian Vulture
54.	185	*Gyps bengalensis* (Gmelin, 1788) Indian White-backed Vulture
55.	184	*Gyps tenuirostris* (G.R. Gray, 1844) * Slender-billed Vulture
56.	181	*Gyps himalayensis* Hume, 1869 Himalayan Griffon
57.	180, 183	*Gyps fulvus* (Hablizl, 1783) Eurasian Griffon
58.	179	*Aegypius monachus* (Linnaeus, 1766) Cinereous Vulture
59.	178	*Sarcogyps calvus* (Scopoli, 1786) Red-headed Vulture
60.	195	*Circaetus gallicus* (Gmelin, 1788) Short-toed Snake-Eagle
61.	196-200	*Spilornis cheela* (Latham, 1790 *Crested Serpent-Eagle
62.	193	*Circus aeruginosus* (Linnaeus, 1758) Western Marsh-Harrier

Sl. No.	HBI No.	Systematic List
63.	189	*Circus cyaneus* (Linnaeus, 1766) Hen Harrier
64.	190	*Circus macrourus* (S.G. Gmelin, 1770) Pallid Harrier
65.	192	*Circus melanoleucos* (Pennant, 1769) Pied Harrier
66.	137-140	*Accipiter badius* (Gmelin, 1788) *Shikra
67.	149-151	*Accipiter virgatus* (Temminck, 1822) *Besra Sparrowhawk
68.	147-148	*Accipiter nisus* (Linnaeus, 1758) Eurasian Sparrowhawk
69.	136	*Accipiter gentilis* (Linnaeus, 1758) Northern Goshawk
70.	157	*Butastur teesa* (Franklin, 1832) White-eyed Buzzard
71.	155-156	*Buteo buteo* Linnaeus, 1758 Common Buzzard
72.	153	*Buteo rufinus* (Cretzschmar, 1827) Long-legged Buzzard
73.	172	*Ictinaetus malayensis* (Temminck, 1822) Black Eagle
74.	170	*Aquila clanga* Pallas, 1811 Greater Spotted Eagle
75.	168	*Aquila rapax* (Temminck, 1828) *Tawny Eagle
76.	169	*Aquila nipalensis* Hodgson, 1833 *Steppe Eagle
77.	167	*Aquila heliaca* Savigny, 1809 Eastern Imperial Eagle
78.	163	*Hieraaetus fasciatus* (Vieillot, 1822) Bonelli's Eagle
79.	164	*Hieraaetus pennatus* (Gmelin, 1788) Booted Eagle

Sl. No.	HBI No.	Systematic List
		10. Family PANDIONIDAE
80.	203	*Pandion haliaetus* (Linnaeus, 1758) Osprey
		11. Family FALCONIDAE
81.	222-224	*Falco tinnunculus* Linnaeus, 1758 Common Kestrel
82.	219	*Falco chicquera* Daudin, 1800 Red-headed Falcon
83.	212-213	*Falco subbuteo* Linnaeus, 1758 Eurasian Hobby
84.	206-207	*Falco cherrug* J.E. Gray, 1834 *Saker
85.	209-211	*Falco peregrinus* Tunstall, 1771 Peregrine Falcon
		VI. Order GALLIFORMES
		12. Family PHASIANIDAE
86.	237-239	*Francolinus francolinus* (Linnaeus, 1766) Black Francolin
87.	244-246	*Francolinus pondicerianus* (Gmelin, 1789) Grey Francolin
88.	250	*Coturnix coturnix* (Linnaeus, 1758) *Common Quail
89.	252	*Coturnix coromandelica* (Gmelin, 1789) Rain Quail
90.	255-258	*Perdicula asiatica* (Latham, 1790) Jungle Bush-Quail
91.	299-300	*Gallus gallus* (Linnaeus, 1758) Red Junglefowl
92.	293-298	*Lophura leucomelanos* (Latham, 1790) Kaleej Pheasant
93.	311	*Pavo cristatus* Linnaeus, 1758 Indian Peafowl
		VII. Order GRUIFORMES
		13. Family TURNICIDAE
94.	316-319	*Turnix suscitator* (Gmelin, 1789) Common Buttonquail

Sl. No.	HBI No.	Systematic List
		14. Family GRUIDAE
95.	323-324	*Grus antigone* (Linnaeus, 1758) Sarus Crane
96.	326	*Grus virgo* (Linnaeus, 1758) Demoiselle Crane
		15. Family RALLIDAE
97.	327-330	*Rallus aquaticus* Linnaeus, 1758 Water Rail
98.	342	*Amaurornis akool* (Sykes, 1832) Brown Crake
99.	343-345	*Amaurornis phoenicurus* (Pennant, 1769) White-breasted Waterhen
100.	337	*Porzana pusilla* (Pallas, 1776) Baillon's Crake
101.	339, 340	*Porzana fusca* (Linnaeus, 1766) Ruddy-breasted Crake
102.	348-349	*Porphyrio porphyrio* (Linnaeus, 1758) Purple Moorhen
103.	347-347a	*Gallinula chloropus* (Linnaeus, 1758) Common Moorhen
104.	350	*Fulica atra* Linnaeus, 1758 Common Coot
		VIII. Order CHARADRIFORMES
		16. Family JACANIDAE
105.	358	*Hydrophasianus chirurgus* (Scopoli, 1786) Pheasant-tailed Jacana
		17. Family ROSTRATULIDAE
106.	429	*Rostratula benghalensis* (Linnaeus, 1758) Greater Painted-Snipe
		18. Family HAEMATOPODIDAE
107	360-361	*Haematopus ostralegus* Linnaeus, 1758 Eurasian Oystercatcher
		19. Family CHARADRIIDAE
108.	373	*Pluvialis fulva* (Gmelin, 1789) *Pacific Golden-Plover

Sl. No.	HBI No.	Systematic List
109.	371	*Pluvialis squatarola* (Linnaeus, 1758) Grey Plover
110.	378	*Charadrius hiaticula* Linnaeus, 1758 Common Ringed Plover
111.	379-380	*Charadrius dubius* Scopoli, 1786 Little Ringed Plover
112.	381-382	*Charadrius alexandrinus* Linnaeus, 1758 Kentish Plover
113.	384-384a	*Charadrius mongolus* Pallas, 1776 Lesser Sand Plover
*114.	374	*Charadrius leschenaultii* Lesson, 1826 Greater Sand Plover
115.	364	*Vanellus vanellus* (Linnaeus, 1758) Northern Lapwing
116.	370	*Vanellus malabaricus* (Boddaert, 1783) Yellow-wattled Lapwing
117	369	*Vanellus duvaucelii* (Lesson, 1826) * River Lapwing
118.	366-368	*Vanellus indicus* (Boddaert, 1783) Red-wattled Lapwing
119.	362	*Vanellus leucurus* (Lichtenstein, 1823) White-tailed Lapwing
		20. Family SCOLOPACIDAE
120.	406	*Gallinago stenura* (Bonaparte, 1830) Pintail Snipe
121.	409	*Gallinago gallinago* (Linnaeus, 1758) Common Snipe
122.	410	*Lymnocryptes minimus* (Brünnich, 1764) Jack Snipe
123.	389-390	*Limosa limosa* (Linnaeus, 1758) Black-tailed Godwit
124.	385-386	*Numenius phaeopus* (Linnaeus, 1758) Whimbrel
125.	387-388	*Numenius arquata* (Linnaeus, 1758) Eurasian Curlew

No.	HBI No.	Systematic List
126.	392	*Tringa erythropus* (Pallas, 1764) Spotted Redshank
127.	393, 394	*Tringa totanus* (Linnaeus, 1758) Common Redshank
128.	395	*Tringa stagnatilis* (Bechstein, 1803) Marsh Sandpiper
129.	396	*Tringa nebularia* (Gunner, 1767) Common Greenshank
130.	397	*Tringa ochropus* Linnaeus, 1758 Green Sandpiper
131.	398	*Tringa glareola* Linnaeus, 1758 Wood Sandpiper
132.	400	*Xenus cinereus* (Guldenstadt, 1774) Terek Sandpiper
133.	401	*Actitis hypoleucos* Linnaeus, 1758 Common Sandpiper
134.	402	*Arenaria interpres* (Linnaeus, 1758) Ruddy Turnstone
135.	416	*Calidris minuta* (Leisler, 1812) Little Stint
136.	417	*Calidris temminckii* (Leisler, 1812) Temminck's Stint
137.	420, 421	*Calidris alpina* (Linnaeus, 1758) Dunlin
138.	422	*Calidris ferruginea* (Pontoppidan, 1813) Curlew Sandpiper
139.	426	*Philomachus pugnax* (Linnaeus, 1758) Ruff
		21. Family RECURVIROSTRIDAE
140.	430-431	*Himantopus himantopus* (Linnaeus, 1758) Black-winged Stilt
141.	432	*Recurvirostra avosetta* Linnaeus, 1758 Pied Avocet
		22. Family PHALAROPIDAE
142.	428	*Phalaropus lobatus* (Linnaeus, 1758) Red-necked Phalarope

Sl. No.	HBI No.	Systematic List
		23. Family BURHINIDAE
143.	435-436	*Burhinus oedicnemus* (Linnaeus, 1758) Stone-Curlew
144.	437	*Esacus recurvirostris* (Cuvier, 1829) * Great Stone-Plover
		24. Family GLAREOLIDAE
145.	443	*Glareola maldivarum* J.R. Forster, 1795 *Oriental Pratincole
146.	444	*Glareola lactea* Temminck, 1820 Small Pratincole
		25. Family LARIDAE
147.	N	*Larus canus* Linnaeus, 1758 Mew Gull
*148.	450	*Larus heuglini* Bree, 1876 *Heuglin's Gull
149.	451	*Larus cachinnans* Pallas, 1811 *Yellow-legged Gull
150.	453	*Larus ichthyaetus* Pallas, 1773 Pallas's Gull
151.	454	*Larus brunnicephalus* Jerdon, 1840 Brown-headed Gull
152.	455	*Larus ridibundus* Linnaeus, 1766 Black-headed Gull
153.	456	*Larus genei* Brème, 1839 Slender-billed Gull
154.	457	*Larus minutus* Pallas, 1776 Little Gull
155.	460-461	*Gelochelidon nilotica* (Gmelin, 1789) Gull-billed Tern
156.	463	*Sterna aurantia* J.E. Gray, 1831 River Tern
157.	475-476	*Sterna albifrons* Pallas, 1764 Little Tern
158.	470	*Sterna acuticauda* J.E. Gray, 1831 Black-bellied Tern

Sl. No.	HBI No.	Systematic List
159.	458	*Chlidonias hybridus* (Pallas, 1811) Whiskered Tern
		26. Family RYNCHOPIDAE
160.	484	*Rynchops albicollis* Swainson, 1838 Indian Skimmer
		IX. Order COLUMBIFORMES
		27. Family PTEROCLIDIDAE
161.	487	*Pterocles exustus* Temminck, 1825 Chestnut-bellied Sandgrouse
		28. Family COLUMBIDAE
162.	516-517	*Columba livia* Gmelin, 1789 Blue Rock Pigeon
163.	530-533	*Streptopelia orientalis* (Latham, 1790) Oriental Turtle-Dove
164.	541	*Streptopelia senegalensis* (Linnaeus, 1766) Little Brown Dove
165.	537-540	*Streptopelia chinensis* (Scopoli, 1786) Spotted Dove
166.	535-536	*Streptopelia tranquebarica* (Hermann, 1804) Red Collared-Dove
167.	534	*Streptopelia decaocto* (Frivaldszky, 1838) Eurasian Collared-Dove
168.	503-505	*Treron phoenicoptera* (Latham, 1790) Yellow-legged Green-Pigeon
		X. Order PSITTACIFORMES
		29. Family PSITTACIDAE
169.	545-548	*Psittacula eupatria* (Linnaeus, 1766) Alexandrine Parakeet
170.	549-550	*Psittacula krameri* (Scopoli, 1769) Rose-ringed Parakeet
171.	562	*Psittacula himalayana* (Lesson, 1832) Slaty-headed Parakeet
172.	557-558	*Psittacula cyanocephala* (Linnaeus, 1766) Plum-headed Parakeet

Sl. No.	HBI No.	Systematic List
		XI. Order CUCULIFORMES
		30. Family CUCULIDAE
173.	570-571	*Clamator jacobinus* (Boddaert, 1783) Pied Crested Cuckoo
174.	573-574	*Hierococcyx varius* (Vahl, 1797) Brainfever Bird
175.	576	*Cuculus micropterus* Gould, 1838 Indian Cuckoo
176.	577-579	*Cuculus canorus* Linnaeus, 1758 Common Cuckoo
177.	581	*Cuculus poliocephalus* Latham, 1790 Lesser Cuckoo
178.	584	*Cacomantis passerinus* (Vahl, 1797) Indian Plaintive Cuckoo
179.	588-589	*Surniculus lugubris* (Horsfield, 1821) Drongo Cuckoo
180.	590-592	*Eudynamys scolopacea* (Linnaeus, 1758) Asian Koel
181.	596-598	*Phaenicophaeus leschenaultii* (Lesson, 1830) Sirkeer Malkoha
182.	600-602	*Centropus sinensis* (Stephens, 1815) *Greater Coucal
		XII. Order STRIGIFORMES
		31. Family STRIGIDAE
183.	616-618b	*Otus sunia* (Hodgson, 1836) *Oriental Scops-Owl
184.	625-627	*Bubo bubo* (Linnaeus, 1758) Eurasian Eagle-Owl
#185.	631-632	*Ketupa zeylonensis* (Gmelin, 1788) Brown Fish-Owl
186.	639-641	*Glaucidium cuculoides* (Vigors, 1831) Asian Barred Owlet
187.	636-637	*Glaucidium radiatum* (Tickell, 1833) *Jungle Owlet

Sl. No.	HBI No.	Systematic List
188.	650-652	*Athene brama* (Temminck, 1821) Spotted Owlet
189.	664	*Asio flammeus* (Pontoppidan, 1763) Short-eared Owl
		XIII. Order CAPRIMULGIFORMES
		32. Family CAPRIMULGIDAE
190.	670-672a	*Caprimulgus indicus* Latham, 1790 Indian Jungle Nightjar
191.	675, 678-679	*Caprimulgus macrurus* Horsfield, 1821 *Large-tailed Nightjar
*192.	680-681	*Caprimulgus asiaticus* Latham, 1790 Common Indian Nightjar
193.	682	*Caprimulgus affinis* Horsfield, 1821 Franklin's Nightjar
		XIV. Order APODIFORMES
		33. Family APODIDAE
194.	683-684	*Collocalia brevirostris* (Horsfield, 1840) Himalayan Swiftlet
195.	693-695	*Tachymarptis melba* (Linnaeus, 1758) Alpine Swift
196.	702-706	*Apus affinis* (J.E. Gray, 1830) House Swift
		XV. Order CORACIFORMES
		34. Family ALCEDINIDAE
197.	722-724	*Alcedo atthis* (Linnaeus, 1758) Small Blue Kingfisher
198.	735-738	*Halcyon smyrnensis* (Linnaeus, 1758) White-breasted Kingfisher
199.	717-718	*Megaceryle lugubris* (Temminck, 1834) Greater Pied Kingfisher
200.	719-720	*Ceryle rudis* (Linnaeus, 1758) Lesser Pied Kingfisher
		35. Family MEROPIDAE
201.	749-752	*Merops orientalis* Latham, 1801 Small Bee-eater

Sl. No.	HBI No.	Systematic List
202.	747	*Merops persicus* Pallas, 1773 Blue-cheeked Bee-eater
203.	748	*Merops philippinus* Linnaeus, 1766 Blue-tailed Bee-eater
*204.	744-745	*Merops leschenaulti* Vieillot, 1817 Chestnut-headed Bee-eater
		36. Family CORACIIDAE
205.	754	*Coracias garrulus* Linnaeus, 1758 European Roller
206.	755-757	*Coracias benghalensis* (Linnaeus, 1758) Indian Roller
		37. Family UPUPIDAE
207.	763-766	*Upupa epops* Linnaeus, 1758 Common Hoopoe
		38. Family BUCEROTIDAE
208.	767	*Ocyceros birostris* (Scopoli, 1786) Indian Grey Hornbill
		XVI. Order PICIFORMES
		39. Family CAPITONIDAE
209.	777-779	*Megalaima virens* (Boddaert, 1783) Great Barbet
210.	780-782	*Megalaima zeylanica* (Gmelin, 1788) Brown-headed Barbet
211.	788	*Megalaima asiatica* (Latham, 1790) Blue-throated Barbet
212.	792	*Megalaima haemacephala* (P.L.S. Müller, 1776) Coppersmith Barbet
		40. Family PICIDAE
213.	796	*Jynx torquilla* Linnaeus, 1758 Eurasian Wryneck
214.	798-799	*Picumnus innominatus* Burton, 1836 Speckled Piculet
215.	848-850	*Dendrocopos canicapillus* (Blyth, 1845) Grey-capped Pygmy Woodpecker

Sl. No.	**HBI No.**	**Systematic List**
216.	842-843	*Dendrocopos auriceps* (Vigors, 1831) Brown-fronted Pied Woodpecker (842-843)
217.	845-846	*Dendrocopos macei* (Vieillot, 1818) Fulvous-breasted Pied Woodpecker
218.	847	*Dendrocopos mahrattensis* (Latham, 1801) Yellow-fronted Pied Woodpecker
#219.	808	*Picus xanthopygaeus* (J.E. Gray & G.R. Gray, 1846) Little Scaly-bellied Green Woodpecker
*220.	806-807	*Picus squamatus* Vigors, 1831 Large Scaly-bellied Green Woodpecker
221.	809-811	*Picus canus* Gmelin, 1788 Black-naped Green Woodpecker
222.	818-823	*Dinopium benghalense* (Linnaeus, 1758) Lesser Golden-backed Woodpecker
		XVII. Order PASSERIFORMES
		41. Family PITTIDAE
223.	867	*Pitta brachyura* (Linnaeus, 1766) Indian Pitta
		42. Family ALAUDIDAE
*224.	872	*Mirafra cantillans* Blyth, 1845 *Singing Bush-Lark
*225.	875-877	*Mirafra erythroptera* Blyth, 1845 Red-winged Bush-Lark
226.	873	*Mirafra assamica* Horsfield, 1840 *Bengal Bush-Lark
227.	878	*Eremopterix grisea* (Scopoli, 1786) Ashy-crowned Sparrow-Lark
228.	892	*Melanocorypha bimaculata* (Ménétriès, 1832) Eastern Calandra-Lark
229.	885-886	*Calandrella brachydactyla* (Leisler, 1814) *Greater Short-toed Lark
230.	889-891	*Calandrella raytal* (Blyth, 1845) Indian Short-toed Lark
231.	898-900	*Galerida cristata* (Linnaeus, 1758) Common Crested Lark

Sl. No.	HBI No.	Systematic List
232.	903-903a	*Alauda arvensis* Linnaeus, 1758 Eurasian Skylark
233.	904-909	*Alauda gulgula* Franklin, 1831 Eastern Skylark
		43. Family HIRUNDINIDAE
234.	911	*Riparia riparia* (Linnaeus, 1758) *Sand Martin
235.	910	*Riparia diluta* (Sharpe & Wyatt, 1893) *Pale Martin
236.	912	*Riparia paludicola* (Vieillot, 1817) Plain Martin
237.	913	*Hirundo rupestris* Scopoli, 1769 Eurasian Crag-Martin
238.	916-918	*Hirundo rustica* Linnaeus, 1758 Common Swallow
239.	921	*Hirundo smithii* Leach, 1818 Wire-tailed Swallow
240.	923-928	*Hirundo daurica* Linnaeus, 1771 Red-rumped Swallow
241	922	*Hirundo fluvicola* Blyth, 1855 Streak-throated Swallow
242.	931	*Delichon dasypus* (Bonaparte, 1850) *Asian House-Martin
		44. Family MOTACILLIDAE
243.	1885-1890	*Motacilla alba* Linnaeus, 1758 White Wagtail
244.	1891	*Motacilla maderaspatensis* Gmelin, 1789 Large Pied Wagtail
245	1881-1883	*Motacilla citreola* Pallas, 1776 Citrine Wagtail
246.	1875-1880	*Motacilla flava* Linnaeus, 1758 Yellow Wagtail
247.	1884	*Motacilla cinerea* Tunstall, 1771 Grey Wagtail
248.	1857	*Anthus richardi* Vieillot, 1818 *Richard's Pipit

Sl. No.	HBI No.	Systematic List
249.	1858-1860	*Anthus rufulus* Vieillot, 1818 *Paddyfield Pipit
250.	1861-1862	*Anthus campestris* (Linnaeus, 1758) Tawny Pipit
251.	1866-1869	*Anthus similis* Jerdon, 1840 Brown Rock Pipit
252.	1854-1855	*Anthus trivialis* (Linnaeus, 1758) Eurasian Tree Pipit
253.	1852-1853	*Anthus hodgsoni* Richmond, 1907 Oriental Tree Pipit
254.	1864	*Anthus cervinus* (Pallas, 1811) Red-throated Pipit (1864)
255.	1865	*Anthus roseatus* Blyth, 1847 Rosy Pipit
256.	1871	*Anthus spinoletta* (Linnaeus, 1758) *Water Pipit
257.	1873	*Anthus sylvanus* (Blyth, 1845) Upland Pipit
		45. Family CAMPEPHAGIDAE
258.	1072-1075	*Coracina macei* (Lesson, 1830) *Large Cuckoo-Shrike
259.	1077	*Coracina melaschistos* (Hodgson, 1836) Black-winged Cuckoo-Shrike
260.	1078-1079	*Coracina melanoptera* (Rüppell, 1839) Black-headed Cuckoo-Shrike
261.	1089	*Pericrocotus roseus* (Vieillot, 1818) Rosy Minivet
262.	1090-1095	*Pericrocotus cinnamomeus* (Linnaeus, 1766) Small Minivet
263.	1085-1087	*Pericrocotus ethologus* Bangs & Phillips, 1914 Long-tailed Minivet
*264.	1080-1083	*Pericrocotus flammeus* (Forster, 1781) Scarlet Minivet
265.	1069-1071	*Tephrodornis pondicerianus* (Gmelin, 1789) Common Woodshrike

Sl. No.	HBI No.	Systematic List
		46. Family PYCNONOTIDAE
266.	1125	*Pycnonotus leucogenys* (Gray, 1835) *Himalayan Bulbul
267.	1126-1132	*Pycnonotus cafer* (Linnaeus, 1766) Red-vented Bulbul
268.	1148-1151	*Hypsipetes leucocephalus* (P.L.S. Muller, 1776) *Black Bulbul
		47. Family IRENIDAE
269.	1097-1101	*Aegithina tiphia* (Linnaeus, 1758) Common Iora
		48. Family LANIIDAE
270.	942-943	*Lanius isabellinus* Hemprich & Ehrenberg, 1833 *Rufous-tailed Shrike
*271.	949a-950a	*Lanius cristatus* Linnaeus, 1758 Brown Shrike
272.	939-940	*Lanius vittatus* Valenciennes, 1826 Bay-backed Shrike
273.	946-948	*Lanius schach* Linnaeus, 1758 Rufous-backed Shrike
274.	933-935	*Lanius meridionalis* Temminck, 1820 * Southern Grey Shrike
		49. Family CINCLIDAE
275.	1775-1776	*Cinclus pallasii* Temminck, 1820 Brown Dipper
		50. Family PRUNELLIDAE
276.	1782-1783	*Prunella strophiata* (Blyth, 1843) Rufous-breasted Accentor
277.	1786-1787	*Prunella atrogularis* (Brandt, 1844) Black-throated Accentor
		51. Family MUSCICAPIDAE
		Subfamily TURDINAE
278.	1723	*Monticola cinclorhynchus* (Vigors, 1832) Blue-headed Rock-Thrush
279.	1724	*Monticola rufiventris* (Jardine & Selby, 1833) Chestnut-bellied Rock-Thrush

Sl. No.	HBI No.	Systematic List
280.	1725-1726	*Monticola solitarius* (Linnaeus, 1758) Blue Rock-Thrush
281.	1729-1730	*Myiophonus caeruleus* (Scopoli, 1786) Blue Whistling-Thrush
282.	1733-1736	*Zoothera citrina* (Latham, 1790) Orange-headed Thrush
283.	1748	*Turdus unicolor* Tickell, 1833 Tickell's Thrush
284.	1750	*Turdus boulboul* (Latham, 1790) Grey-winged Blackbird
285.	1763-1764	*Turdus ruficollis* Pallas, 1776 Dark-throated Thrush
286.	1647-1649	*Luscinia pectoralis* (Gould, 1837) Himalayan Rubythroat
287.	1644-1646a	*Luscinia svecica* (Linnaeus, 1758) Bluethroat
288.	1650 1651	*Luscinia brunnea* (Hodgson, 1837) Indian Blue Robin
289.	1661-1664	*Copsychus saularis* (Linnaeus, 1758) Oriental Magpie-Robin
290.	1717-1721	*Saxicoloides fulicata* (Linnaeus, 1776) Indian Robin
291	1670	*Phoenicurus caeruleocephalus* (Vigors, 1831) Blue-capped Redstart
292.	1671-1672	*Phoenicurus ochruros* (Gmelin, 1774) Black Redstart
293.	1675	*Phoenicurus frontalis* (Vigors, 1832) Blue-fronted Redstart
294.	1716	*Chaimarrornis leucocephalus* (Vigors, 1831) White-capped Redstart
295.	1679	*Rhyacornis fuliginosus* (Vigors, 1831) Plumbeous Redstart
296.	1695-1698	*Saxicola torquata* (Linnaeus, 1766) Common Stonechat
297.	1699	*Saxicola leucura* (Blyth, 1847) White-tailed Stonechat

Sl. No.	HBI No.	Systematic List
298.	1700-1703	*Saxicola caprata* (Linnaeus, 1766) Pied Bushchat
299.	1705	*Saxicola ferrea* Gray, 1846 Grey Bushchat
300.	1712	*Oenanthe picata* (Blyth, 1847) Variable Wheatear
301.	1715	*Oenanthe pleschanka* (Lepechin, 1770) Pied Wheatear
302.	1709-1710	*Oenanthe deserti* (Temminck, 1825) Desert Wheatear
303.	1706	*Oenanthe isabellina* (Temminck, 1829) Isabelline Wheatear
304.	1692	*Cercomela fusca* (Blyth, 1851) Indian Chat
		Subfamily TIMALIINAE
305.	1312-1316	*Garrulax lineatus* (Vigors, 1831) Streaked Laughingthrush
306.	1324-1330	*Garrulax erythrocephalus* (Vigors, 1832) Red-headed Laughingthrush
307.	1152-1159	*Pellorneum ruficeps* Swainson, 1832 Spotted Babbler
308.	1181-1183	*Pomatorhinus erythrogenys* Vigors, 1832 *Rusty-cheeked Scimitar-Babbler
309.	1168-1171	*Pomatorhinus schisticeps* Hodgson, 1836 *Hodgson's Scimitar-Babbler
310.	1197-1198	*Pnoepyga albiventer* (Hodgson, 1837) Greater Scaly-breasted Wren-Babbler
311.	1211	*Stachyris pyrrhops* Blyth, 1844 Black-chinned Babbler
312.	1230-1232	*Chrysomma sinense* (Gmelin, 1789) Yellow-eyed Babbler
313.	1253-1254	*Turdoides caudatus* (Dumont, 1823) Common Babbler
314.	1255-1256	*Turdoides earlei* (Blyth, 1844) Striated Babbler

Sl. No.	HBI No.	Systematic List
315.	1261-1265	*Turdoides striatus* (Dumont, 1823) Jungle Babbler
316.	1367-1370	*Yuhina flavicollis* Hodgson, 1836 Yellow-naped Yuhina
		Subfamily SYLVIINAE
317.	1498-1500a	*Cisticola juncidis* (Rafinesque, 1810) Streaked Fantail-Warbler
318.	1526-1528	*Prinia criniger* Hodgson, 1836 Brown Prinia
319.	1506	*Prinia buchanani* Blyth, 1844 Rufous-fronted Prinia
320.	1502-1505	*Prinia hodgsonii* Blyth, 1844 Franklin's Prinia
321.	1519-1523	*Prinia sylvatica* Jerdon, 1840 Jungle Prinia
322.	1524-1525	*Prinia flaviventris* (Delessert, 1840) Yellow-bellied Prinia
323.	1515-1518	*Prinia socialis* Sykes, 1832 Ashy Prinia
324.	1510-1514	*Prinia inornata* Sykes, 1832 *Plain Prinia
325.	1477-1478	*Cettia fortipes* (Horsfield, 1845) Brown-flanked Bush-Warbler
326.	1485-1487	*Cettia brunnifrons* (Hodgson, 1845) Grey-sided Bush-Warbler
327.	1545	*Locustella naevia* (Boddaert, 1783) Pale Grasshopper-Warbler
328.	1495	*Acrocephalus melanopogon* (Temminck, 1823) Moustached Warbler
329.	1557-1558	*Acrocephalus agricola* (Jerdon, 1845) Paddyfield Warbler
330.	1556	*Acrocephalus dumetorum* Blyth, 1849 Blyth's Reed-Warbler
331.	1550-1552	*Acrocephalus stentoreus* (Hemprich & Ehrenberg, 1833) Indian Great Reed-Warbler

Sl. No.	HBI No.	Systematic List
332.	1562-1563	*Hippolais caligata* (Lichtenstein, 1823) Booted Warbler
333.	1535-1539	*Orthotomus sutorius* (Pennant, 1769) Common Tailorbird
334.	1574-1575	*Phylloscopus collybita* (Vieillot, 1817) *Common Chiffchaff
*335.	1577	*Phylloscopus neglectus* Hume, 1870 Plain Leaf-Warbler
336.	1582-1583	*Phylloscopus fuligiventer* (Hodgson, 1845) Smoky Warbler
*337.	1579	*Phylloscopus affinis* (Tickell, 1833) *Tickell's Warbler
338.	1581	*Phylloscopus griseolus* Blyth, 1847 Olivaceous Leaf-Warbler
339.	1594-1596	*Phylloscopus chloronotus* (G.R. Gray & J.E. Gray, 1846) *Lemon-rumped Warbler
340.	1593	*Phylloscopus subviridis* (Brooks, 1872) Brooks's Leaf-Warbler
*341.	1592	*Phylloscopus inornatus* (Blyth, 1842) *Yellow-browed Warbler
342.	1590-1591	*Phylloscopus humei* (Brooks, 1878) *Hume's Warbler
343.	1602-1605	*Phylloscopus trochiloides* (Sundevall, 1837) Greenish Leaf-Warbler
344.	1606	*Phylloscopus occipitalis* (Blyth, 1845) *Western Crowned Warbler
345.	1615	*Seicercus burkii* (Burton, 1836) *Gold-spectacled Flycatcher-Warbler
346.	1616-1619	*Seicercus xanthoschistos* (G.R. Gray & J.E. Gray, 1846) Grey-headed Flycatcher-Warbler
347.	1548	*Megalurus palustris* Horsfield, 1821 Striated Marsh-Warbler
348.	1567-1568	*Sylvia curruca* (Linnaeus, 1758) *Common Lesser Whitethroat

Sl. No.	HBI No.	Systematic List
349.	1570	*Sylvia althaea* Hume, 1878 *Hume's Lesser Whitethroat
350.	1571	*Sylvia nana* (Hemprich & Ehrenberg, 1833) Desert Warbler
		Subfamily MUSCICAPINAE
351.	1405-1406	*Muscicapa sibirica* Gmelin, 1789 Sooty Flycatcher
352.	1407	*Muscicapa dauurica* Pallas, 1811 Asian Brown Flycatcher
*353.	1414	*Ficedula strophiata* (Hodgson, 1837) Orange-gorgeted Flycatcher
354.	1411-1412	*Ficedula parva* (Bechstein, 1792) Red-throated Flycatcher
355.	1421-1422	*Ficedula superciliaris* (Jerdon, 1840) Ultramarine Flycatcher
356.	1423-1425	*Ficedula tricolor* (Hodgson, 1845) Slaty-blue Flycatcher
357.	1445	*Eumyias thalassina* (Swainson, 1838) Verditer Flycatcher
358.	1440	*Cyornis rubeculoides* (Vigors, 1831) Blue-throated Flycatcher
359.	1448-1449	*Culicicapa ceylonensis* (Swainson, 1820) Grey-headed Flycatcher
		Subfamily MONARCHINAE
360.	1460-1464	*Terpsiphone paradisi* (Linnaeus, 1758) Asian Paradise-Flycatcher
		Subfamily RHIPIDURINAE
361.	1450	*Rhipidura hypoxantha* Blyth, 1843 Yellow-bellied Fantail-Flycatcher
362.	1454-1459	*Rhipidura albicollis* (Vieillot, 1818) White-throated Fantail-Flycatcher
363.	1451-1453	*Rhipidura aureola* Lesson, 1830 White-browed Fantail-Flycatcher
		52. Family PARIDAE
364.	1802	*Parus melanolophus* Vigors, 1831 Spot-winged Crested Tit

Sl. No.	HBI No.	Systematic List
365.	1790-1797	*Parus major* Linnaeus, 1758 Great Tit
366.	1799	*Parus monticolus* Vigors, 1831 Green-backed Tit
367.	1809-1811	*Parus xanthogenys* Vigors, 1831 Black-lored Yellow Tit
368.	1813-1814	*Sylviparus modestus* Burton, 1836 Yellow-browed Tit
		53. Family SITTIDAE
369.	1827-1831	*Sitta castanea* Lesson, 1830 Chestnut-bellied Nuthatch
370.	1839	*Tichodroma muraria* (Linnaeus, 1766) Wallcreeper
		54. Family CERTHIIDAE
371.	1845-1848	*Certhia himalayana* Vigors, 1832 Bar-tailed Tree-Creeper
		55. Family DICAEIDAE
372.	1892-1894	*Dicaeum agile* (Tickell, 1833) Thick-billed Flowerpecker
373.	1899-1900	*Dicaeum erythrorhynchos* (Latham, 1790) Tickell's Flowerpecker
		56. Family NECTARINIIDAE
374.	1916-1918	*Nectarinia asiatica* (Latham, 1790) Purple Sunbird
375.	1927-1929a	*Aethopyga siparaja* (Raffles, 1822) Crimson Sunbird
		57. Family ZOSTEROPIDAE
376.	1933-1936	*Zosterops palpebrosus* (Temminck, 1824) Oriental White-eye
		58. Family EMBERIZIDAE Subfamily EMBERIZINAE
377.	2060	*Melophus lathami* (Gray, 1831) Crested Bunting
378.	2042	*Emberiza leucocephalus* Gmelin, 1771 Pine Bunting

Sl. No.	HBI No.	Systematic List
379.	2051-2052	*Emberiza cia* Linnaeus, 1766 *Rock Bunting
380.	2050	*Emberiza buchanani* Blyth, 1845 Grey-necked Bunting
381.	2048	*Emberiza stewarti* (Blyth, 1854) White-capped Bunting
382.	2044	*Emberiza bruniceps* Brandt, 1841 Red-headed Bunting
		59. Family FRINGILLIDAE
383.	1998	*Serinus pusillus* (Pallas, 1811) Fire-fronted Serin
384.	1990, 1992	*Carduelis spinoides* Vigors, 1831 *Yellow-breasted Greenfinch
385.	1987-1989	*Carduelis carduelis* (Linnaeus, 1758) Eurasian Goldfinch
386.	1994	*Carduelis cannabina* (Linnaeus, 1758) Eurasian Linnet
387.	2010-2013	*Carpodacus erythrinus* (Pallas, 1770) Common Rosefinch
		60. Family ESTRILDIDAE
388.	1964	*Amandava amandava* (Linnaeus, 1758) Red Munia
389.	1966	*Lonchura malabarica* (Linnaeus, 1758) White-throated Munia
390.	1974-1975	*Lonchura punctulata* (Linnaeus, 1758) Spotted Munia
		61. Family PASSERIDAE Subfamily PASSERINAE
391.	1938-1939a	*Passer domesticus* (Linnaeus, 1758) House Sparrow
392.	1946-1947	*Passer rutilans* Temminck, 1835 Cinnamon Tree Sparrow
393.	1948-1949	*Petronia xanthocollis* (Burton, 1838) Yellow-throated Sparrow

Sl. No.	HBI No.	Systematic List
		Subfamily PLOCEINAE
394.	1961	*Ploceus benghalensis* (Linnaeus, 1758) Black-breasted Weaver
395.	1962-1963	*Ploceus manyar* (Horsfield, 1821) Streaked Weaver
396.	1957-1959	*Ploceus philippinus* (Linnaeus, 1766) Baya Weaver
		62. Family STURNIDAE
397.	987-989	*Sturnus malabaricus* (Gmelin, 1789) Grey-headed Starling
398.	994	*Sturnus pagodarum* (Gmelin, 1789) Brahminy Starling
399.	996	*Sturnus roseus* (Linnaeus, 1758) Rosy Starling
400.	997-1001	*Sturnus vulgaris* Linnaeus, 1758 Common Starling
401.	1002-1004	*Sturnus contra* Linnaeus, 1758 Asian Pied Starling
402.	1006-1007	*Acridotheres tristis* (Linnaeus, 1766) Common Myna
403.	1008	*Acridotheres ginginianus* (Latham, 1790) Bank Myna
404.	1009-1011	*Acridotheres fuscus* (Wagler, 1827) Jungle Myna
		63. Family ORIOLIDAE
405.	952-953	*Oriolus oriolus* (Linnaeus, 1758) Eurasian Golden Oriole
406.	958-960a	*Oriolus xanthornus* (Linnaeus, 1758) Black-headed Oriole
*407.	961	*Oriolus traillii* (Vigors, 1832) Maroon Oriole
		64. Family DICRURIDAE
408.	962-964	*Dicrurus macrocercus* Vieillot, 1817 *Black Drongo

Sl. No.	HBI No.	Systematic List
409.	965-966b	*Dicrurus leucophaeus* Vieillot, 1817 Ashy Drongo
*410.	967-969	*Dicrurus caerulescens* (Linnaeus, 1758) White-bellied Drongo
411.	973	*Dicrurus hottentottus* (Linnaeus, 1766) Spangled Drongo
		65. Family CORVIDAE
412.	1025-1026	*Urocissa flavirostris* (Blyth, 1846) Yellow-billed Blue Magpie
413.	1027-1028	*Urocissa erythrorhyncha* (Boddaert, 1783) Red-billed Blue Magpie
414.	1030a-1034	*Dendrocitta vagabunda* (Latham, 1790) Indian Treepie
415.	1037-1039	*Dendrocitta formosae* Swinhoe, 1863 Grey Treepie
416.	1048-1051	*Corvus splendens* Vieillot, 1817 House Crow
417.	1054-1057	*Corvus macrorhynchos* Wagler, 1827 Jungle Crow
418.	1059-1060	*Corvus corax* Linnaeus, 1758 Common Raven